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SURGICAL ANALGESIA FROM SPINAL COCAINIZATION.*

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Since the publication of Bier's paper, in 1899, on spinal cocainization as a substitute for general anesthesia, in operations upon the lower half of the body, a great number of contributions have appeared in the literature, in which every phase of this interesting subject has been discussed *ad infinitum*. As most of this literature is at the disposal of the members of this Society, I propose to pass over the physiology of endomeningeal injection of cocaine and other agents employed for the purpose of producing surgical analgesia and as therapeutic agents and deal briefly with the practical surgical features of the procedure.

No just comparison can be made between general anesthesia and spinal analgesia, because of the necessary limitation of application of the latter to operations upon the lower half of the body. In a certain class of cases when, for good reason, a general anesthetic is contraindicated, spinal analgesia is of great value. The contraindications referred to are those generally agreed upon by both physicians and surgeons. These are very serious lesion of the heart, lungs or kidneys. Of these, I may mention: Chronic bronchitis, emphysema, valvular heart disease and nephritis. Especially when we have a combination of these diseases is a general anesthetic strongly contraindicated. When such conditions exist, and when for other reasons, regional and local anesthesia are impracticable, spinal analgesia is invaluable, and merits more than a passing consideration.

The objections to the use of spinal cocainization that are usually made may be stated as follows:

1. That there are immediate and remote dangers, which are considerable.
2. That it is uncertain in its action, both as to producing surgical analgesia and as to its duration.
3. That attempts at introducing cocaine sometimes fail.
4. That there are unpleasant after-effects.

We must admit that all of these objections are more or less valid. In considering them individually, we find that although deaths may occur as a direct result of spinal cocainization, yet in those reported it would appear that the same termination would probably have occurred in most of them if a general anesthetic had been employed (as will appear from the following cases).

F. Hahn (centralblatt f. d. Grenz. Gebiet Bd. 4) collected 1,708 cases of spinal cocainization for surgical analgesia, of which 8 cases died. In one of these, Tuffier's case, where the lethal issue was attributed to the use of cocaine, the autopsy showed a serious heart and lung lesion, sufficient to cause death. In Dumont's case, death six days after operation; general tuberculosis. In Kocher's case, death some time after resection of a tubercular ankle, with symptoms of meningitis; no autopsy. This could have been tubercular meningitis. Lilienthal's case; death some hours after operation. Tumor of the brain found post mortem.

Foote's case, an aged woman, death following three days after spinal cocainization from general debility. In these five cases it is evident that death could not be attributed to cocaine poisoning.

As to the immediate risks, spinal puncture, under the conditions that usually exist in surgical cases, is in itself harmless; on the other hand, when employed for diagnostic purposes it has been occasionally fol-

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lowed by serious symptoms, and even a fatal termination. Under these conditions, there generally exists some serious disease of the central nervous system or its coverings, which determines the lethal issue.

The immediate danger in spinal analgesia must be charged to the toxic effect of cocaine. This danger exists, no doubt, and it is not always directly proportionate to the quantity of the drug employed. The uncertainty of action, the frequent idiosyncrasies exhibited toward this drug by different individuals, are generally recognized.

At the present time the actual danger from poisoning cannot be accurately estimated, although spinal cocainization has been employed in several thousand cases. The unreliability of the drug and the uncertainty of its action in different individuals will always remain an objection to its use, excepting in cases where the dangers from a general anesthetic outweigh the risks incident to the administration of a minimum dose. Morton, of San Francisco, up to November, 1902, had employed it in 673 cases without having more than one fatality. In this case the post-mortem findings were against cocaine poisoning.

The danger of septic meningitis can be eliminated by following the general rules of aseptic technique. In no case, so far reported, has an acute meningitis developed after spinal puncture.

The danger from remote changes in the cord are *nil*, as has been demonstrated beyond question, both by post-mortem and experimental evidence.

The fact that in certain cases no analgesia is produced seems to deter some from employing this procedure. Morton records one failure in 673 cases. My experience, based upon about 70 cases, there were 3 in which no surgical analgesia followed the injection of 15 m. of a 2% solution. In these three cases Truax, Green & Company's preparation of 2% sol. cocaine in sealed tubes was employed. From the total failure of the injection, I am led to believe that the solution was not of the strength indicated, or else contained no cocaine at all. In all of my cases when a fresh solution was made, analgesia was complete, usually to the costal arch, sometimes higher. Failures from inability to reach the spinal canal are unusual, even in the hands of the inexperienced. Deformities of the lumbar spine may complicate the operation, but as we have a choice of any part between the second lumbar and the lumbo-sacral articulation, no difficulty is ordinarily encountered.

Unpleasant after-effects, such as headache, vomiting, nausea, palpitation, and thirst follow in about 40% of the cases. The most distressing after-effect is the headache, which may last for several days. This, as has been proven by the experiments of Marx and others, is not due to the effect of cocaine, but occurs when a decinormal salt solution or sterile water is injected into the spinal canal. The nausea and vomiting are usually transient, lasting but a few moments. The perspiration and pallor that are quite common are alarming at first, but are of no especial importance. In none of my cases were there any serious respiratory or cardiac symptoms. In patients of extreme age, and those suffering from well marked heart lesions, the pulse generally remained unchanged.

In one case, a woman of 66 (Dr. Hutchinson's patient), with mitral insufficiency, parenchymatous nephritis, ascites and general anasarca, operated upon for a strangulated femoral hernia, no change in the pulse nor any respiratory difficulty were noted.

In a number the pulse became slower, and of a better quality as the operation progressed.

In a case operated upon at St. Luke's Hospital, where there existed a heart lesion, with probably an aortic aneurysm, an operation for double inguinal hernia with an acutely inflamed appendix in the right sac, was done under spinal analgesia, after repeated attempts had been made to administer a general anesthetic. In this case the pulse improved greatly during the operation, and no unpleasant after-effects were noted.

Involuntary evacuation of the bowels during the operation has been mentioned as an objection. In none of my cases has this occurred. In all of my cases the analgesia

has lasted long enough to permit of completion of the operation.

Among the cases that I have operated upon by this method I may mention: Triple hernia; three cases of typhoid perforation of the bowel; intestinal obstruction; three cases of strangulated hernia, with resection of intestine; appendectomy; castration; suprapubic cystotomy; hemorrhoids; perineal resection of rectum; disarticulation of the hip; double thigh amputation and resection of the knee.

Kocher mentions that healing of the wounds made under spinal analgesia does not seem to progress as smoothly as when a general anesthetic has been employed. In none of my cases has any delay in healing been noticeable.

In employing this method in operations upon the upper half of the body, I have had no experience. Morton and Tait, of San Francisco, have rendered analgesic the upper extremities, and also the neck, and parts supplied by the fifth nerve, by injections in the cervical spinal canal, and by forcibly injecting the solution in the lower dorsal and lumbar portions.

Technique.

In all my cases the technique employed was that recommended by Tuffier. The steps are:

1. Preliminary hypodermic injection of one-fourth gr. of morphine.

2. Careful preparation of lumbar portion of the back, extending around as far as the middle of the crest of the ilium.

3. Sitting posture, if possible, with the body bent forward in the "scorching position."

4. Recognition of the fourth lumbar spine, which is found by drawing a line from the highest point of one iliac crest to the same point on the opposite side.

5. The needle is introduced just below and to one side of the tip of the fourth lumbar spine, and is directed upwards, forwards and toward the median line for a distance of from two to three and one-half inches. When the membranes are penetrated a distinct diminution of resistance is noticed.

As soon as the needle enters the spinal canal the spinal fluid usually begins to drip from the needle. At first it may be blood-stained, but soon becomes clear. If, after reaching the canal, no fluid escapes, its flow may be hastened by having the patient cough. A stylet may be passed into the needle to remove any obstruction that might be present.

The use of a properly made needle is of importance. The one that I have found most serviceable is Luer's needle and syringe. The needle should be of platinum, and have at the point a short bevel with dull edges. The syringe is made entirely of glass. After introducing the needle, a quantity of spinal fluid equal to the amount of solution that is to be injected is permitted to escape. As the experiments of Tuffier, Carrini and Marx go to show that nausea and vomiting may be induced by the introduction of sterile water or any other fluid, as well as solution of cocain, and is possibly due to the presence of the added fluid rather than any toxic action of the drug, it would appear rational to reduce the endomeningeal pressure by permitting the escape of some of the spinal fluid. In most of my cases I have employed a fresh two per cent solution of cocaine, prepared at the time of the operation, of which from 15 to 20 m. were injected. I have not followed the method of Morton of placing sterile dry cocaine in the syringe and dissolving it in the spinal fluid withdrawn and then injecting this solution. This undoubtedly is an excellent method.

After the injection, analgesia begins at the toes and gradually extends upwards, usually within two minutes. It is complete generally within ten minutes. At times not until after twenty minutes. In my cases it never extended above the nipple line, and seldom above the level of the tenth costal cartilage at the parasternal line.

The duration of the analgesia is from thirty minutes to three hours or longer. It is never safe to count on its lasting longer than one and one-half hours.

SURGICAL INDICATIONS FOR SPINAL COCAINIZATION.

1. In operations upon the lower half of the body, when, from kidney, lung or heart disease, a general anesthetic is dangerous, and where infiltration or analgesia from neural injections of cocaine are not possible, spinal analgesia can be employed.

2. In strangulated hernia or intestinal obstruction from other causes, and perforations, where considerable time may be required, thus contraindicating the use of local anesthesia, spinal cocainization is an ideal method of securing analgesia, first, because the patient remaining conscious is not so likely to drown in fecal vomit; second, because the shock from the puncture is practically *nil*. In traumatic surgery of the lower extremities, the use of spinal cocainization "blocks" the reflexes and eliminates to a great extent the risk of shock. In amputations about the hip, where shock from the operation is generally very severe, and often fatal, after cocainization of the cord the amputation may be performed without any change in the pulse rate. In this class of operations if, for good reasons, unconsciousness is essential, as it sometimes is, a small amount of ether and chloroform may be administered to secure this end. The spinal cocainization insures the required analgesia.

I believe spinal analgesia is contraindicated in all cases in hysterical women, and young children, and in the insane. It should be used only when its action can be explained to the patient, and thus co-operation secured.

I do not consider any ordinary heart lesion a contraindication to its use. It goes without saying that any marked idiosyncrasy for cocaine should constitute a positive contraindication against spinal analgesia.

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MULTIPLE NEUROFIBROMATA.*

BY R. B. PREBLE, M. D., CHICAGO.

I intended to show one case of this rather common condition, but this afternoon Dr. Goodkind had in his service at the County Hospital another case, so I brought both of these patients here tonight to show you, and my only excuse for presenting them at all, is to show you to an extraordinary degree one of the commonest of clinical findings.

It is not perhaps generally appreciated that the little pedunculated tumors so commonly found upon the thorax are in reality small fibromatous tumors arising from the fibrous elements of the nerves, and it is only when we find these tumors present in immense numbers, as they are in these cases, that our attention is particularly drawn to them.

Here is a man, 64 years old, who, at the age of 20, began to develop upon his body in places a large number of these tumors. They are now present in immense numbers. How many hundreds there are scattered over his body I do not know. All of you can see the larger tumors. Some of them are almost microscopical in size, others approximating the size of a pigeon's egg. Many of them are sessile, and others are pedunculated, all of them being covered with skin which is more or less perfect, although the skin does not show the same degree of nutrition which the normal skin does. Many of them present upon the surface large comedones. Most of them are unpigmented, but some of them are. They are present everywhere upon the body. You will see them upon the back of the head, over the thorax, the arms and legs. On the back they are more numerous than elsewhere.

This other man is younger. He is 58 years of age, but gives exactly the same history as the first case. At about the same age he began to notice these tumors appearing upon the body. It is true, they are much less numerous than in the other case, but still they are present in great numbers. There are many hundreds of them. This man has one upon the thigh which is about the size of a hen's egg.

In addition to the presence of these tumors, the men show one other peculiarity, which is usually present, and that is, there

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is more or less pigmentation of the skin. The skin of both of them, particularly of the older man, is quite diffusely pigmented, but does not anywhere show intense pigmentation, except in small areas. Here, for example, I show you a small area of pigmentation of dark brown. The other man's skin is practically the same, but there is not so much pigmentation.

The tumors in both cases show exactly the same charateristics—they are sessile or pedunculated tumors, covered with a thin, rather atrophic, skin, and sometimes with comedoes, more often without; sometimes a little pigmented, in other cases a decrease in the amount of pigmentation. The tumor on the trunk of this man shows better than any of the other tumors on the other.

I cannot exaggerate the frequency with which we find these small tumors, which have a distinct pedicle, and look as if at some time they were very much larger than they are at present. The skin is wrinkled, thin and delicate, and in most of them the pigment is less abundant than the pigment in the normal skin.

It would naturally occur to anyone to ask whether or not these tumors cause any disturbance whatsoever. They do so only indirectly. This man, the younger of the two, says he has never had any trouble with any of them. The older man has had some trouble with some of them, for reasons easy to understand. For instance, this tumor upon the forehead is troublesome at times because it interferes with his hat, and these tumors also on his back interfere with his comfort more or less when he lies down. The pressure upon them causes pain, and that is usually the rule when the tumors are numerous. In the other case, as I have said, they cause very little or no disturbance. They do not cause pain, do not interfere with the function of the nerves, and while they do not look like it, they, as a matter of fact, develop from the cutaneous nerves.

There is another set of phenomena quite often present in these cases. There are tumors distinctly in connection with the nerves. Here one would not at first suspect that tumors appear in relation to the nerves. In other cases there are tumors developing obviously and manifestly in connection with the nerve, so that one can feel them under the skin as a series of nodules and assume an arrangement which gives a sensation comparable to the sensation obtained from varicocele. These tumors in the nerves are quite frequent, and seem to cause no disturbance whatever in general. They cause no interference with function, as a rule.

A third phenomenon which these patients present to a certain degree is the presence of an excessive amount of pigmentation in the skin, sometimes diffusely arranged, sometimes in geometrical figures, oftentimes arranged distinctly along the distribution of some one of the cutaneous nerves.

In addition to those phenomena, there is still a phenomenon which ought to be mentioned, which sometimes happens. That is, the tumors of the skin, instead of being distributed more or less universally over the body, as in both of these cases, are concentrated over one nerve, and we have the picture known to you as fibroma molluscum, which in certain of its forms is a neurofibroma. In addition to the disturbances I have mentioned, one occasionally finds functional disturbances, and if one hunts through the literature as I did, a few years ago, he will be surprised at the infrequency with which any note is made of functional disturbances of the nervous system. The patient complains of paresthesia, or hyperesthesia, occasionally of anesthesia, and I myself had occasion a few years ago to have under observation a patient who showed this condition to a far greater degree than either of these men, namely, the symptom of evident trophic disturbance. The patient to whom I refer was a young woman who had this condition for many years, and who developed upon the posterior surface of one thigh an ulcer which had all the characteristics of a perforating ulcer, so commonly seen in tabes. This girl developed at the end of life gangrene of one foot, for which no other explanation was obvious. Such trophic disturbances as those are exceptional. Another functional symptom is pain, but that is altogether unusual. Even

in these cases where the relation of the tumors to the nerves is obvious, and where upon physical examination the tumors are found directly in the nerve, and widely separating the nerve fibres, still the patients do not complain of pain. This young woman to whom I have referred had one tumor in her neck which was very painful, and which upon the autopsy table showed no variation from all the other tumors which she had, and one can roughly say that there was not a nerve in her body, either cerebral, spinal or sympathetic, which did not show these tumors in large numbers, some attaining considerable size. Sometimes these tumors give rise to disturbances. In some instances the tumor may develop along the course of the nerve and extend into the cranial cavity, or spinal canal, and give rise to the same disturbance which any other neoplasm would do. This has been observed to occur in some cases with great rapidity. Bergrün reported some years ago a case in a boy of eleven, in whom these tumors developed along the cranial nerves, and caused death in the course of a short time by extending to and within the cranial cavity. This woman had tumors in connection with the various spinal nerves, and they extended to and within the spinal canal, and from compression upon the cord gave rise to marked degenerative changes in the spinal cord. While this woman's cranial nerves were also involved, none of the tumors extended within the cranial cavity.

Another thing which must be remembered in the course of these conditions is the possibility of the tumors undergoing sarcomatous degeneration. There have been a moderate number of cases reported in the literature—some 17 or 18—in which the tumors have undergone sarcomatous degeneration. This older man shows one other thing, and that is, if you will notice his hand, you will see a deformity which has been caused by an arthritic process. Several of the smaller joints of the hands have undergone changes which one may describe under the name of arthritis deformans. The same variety of deforming arthritis has taken place in the joints, and this is a phenomenon which has not been frequently seen in connection with these tumors. A few years ago I searched the literature and found one case in which such changes were described, and I was impressed by it because the young woman to whom I have referred had an extremely severe and generalized arthritis deformans, and it was that clinical estimate which seemed to furnish a basis of information as to the nature of arthritis deformans. We hoped by examining the nervous system we might be able to demonstrate some relation between this disease of the nerves, which long antedated the arthritis deformans, but at the autopsy we were unable to demonstrate any relation whatsoever. It seemed to be an accidental combination. This older man shows exactly similar changes, although they are much less marked in degree, and were it not for the entire absence of any evidence showing the relation between the two processes in the case of this young woman, I should again think that perhaps here we would have an opportunity to demonstrate some relation between the nerve changes and the arthritic changes.

As to what causes the development of these tumors, it would doubtless occur to you that there might be some element of heredity, and, as a matter of fact, there are on record a few cases in which there have been a number of examples of this condition in the same form. Virchow reports one family in which changes occurred in three successive generations, but with one or two exceptions none of the cases has shown heredity. These men do not give any history of any heredity. This condition is said to be the result of some disturbance in the evolution of the embryo. All the tissues which are disturbed in this condition are derived from the epiblast, and it has been suggested that in the evolution of the embryo there is some disturbance of epiblastic tissue. This congenital condition is suggested by the great bulk of cases which show these tumors from birth, but in the three cases I have mentioned none showed any tumors or any other disturbance at birth.

Another suggestion which has been made as to the etiology of this condition is that during the evolution of the fetus it develops multiple neuritis, and these tumors are the result, in a number of instances, of disturbances in the skin from such a neuritis. That theory is purely speculative.

Dr. Preble (closing the discussion): In reply to Dr. Freund's question, I do not think these tumors have any particular bearing upon nutrition. There is no reason whatever for suspecting that any emaciation which may be observed is due to the presence of these tumors.

Dr. Neill has just asked me why I did not say anything about treatment. There is really nothing to be said about it. Of course, if these tumors become mechanically troublesome, as, for example, this large tumor which gets in the way of the man's hat, it is easy to remove it.

THE LARVATED FORMS OF EXOPHTHALMIC GOITRE.*

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It is a notable fact that, in regard to the diagnosis of exophthalmic goitre, the clinicians of to-day are divided into two camps, almost as sharply as they were in the days of Flint and Trousseau. Like the former, there are those who find this to be a "rare affection," because they adopt a close and rigid definition of it; whereas, like the latter there are some who regard it as being quite common because in their opinion "the disease may be foreseen and does really exist in a great number of instances without there being exophthalmos, bronchitis or extreme frequency of the pulse."

At once this brings up the question, what is exophthalmic goitre? At what point in its clinical portraiture does it cease to be amenable to a positive diagnosis and become a mere suspicional disease? What constitutes a typical case and what an atypical case? The answer to these queries is fraught with momentous consequences; for by it our statistics in regard to the relative frequency of the disease, its progress and its proper treatment, many have to undergo in some quarters considerable modification.

I have been asked to discuss tonight the atypical or larvated cases—a most difficult task since the whole subject of these so-called *formes frustes* is in a somewhat chaotic condition. The very definition of an atypical form of the disease must necessarily rest upon the definition of the typical form; and the farther we verge away from the latter, the more uncertain our ground becomes. Even the most remote instance of an atypical or rudimentary form of the disease must still be recognizable as a case of exophthalmic goitre; but upon what among its atypical manifestations is it still to be recognized as Graves' disease and not as something else? Answer that question and the whole topic of ill-defined cases becomes immediately simplified.

I have made a rough tabulation of all of the clinical phenomena that have been from time to time associated with variable frequency with the diagnosis of exophthalmic goitre. They number upwards of seventy-five. In order to get at something definite, I have divided these numerous symptoms into three groups. (a) *Typical,* (b) *Doubtful* and (c) *Complicating or merely associating.*

a. *Typical.* At the present time it is pretty generally agreed that the triad, tachycardia, struma and exophthalmos, not only together constitute a typical picture of Graves' disease, but that each of these symptoms, *when sufficiently obvious,* is so characteristic that it alone may serve for a diagnosis. The same may be affirmed of a fourth symptom, tremor, though with a less degree of positiveness. Not one of these symptoms, *when sufficiently developed to be available for diagnostic purposes,* appears exactly in the same way and under the same conditions in any other disease. For instance, the *tachycardia* is less paroxysmal in its exacerbations than it is in any other neurosis. It is the earliest, the most constant and subjectively the most obtrusive symptom. It usually appears abruptly in a neuropath after some severe physical strain or mental shock. The beat is irregular and with an

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exalted degree of force. The impulse is sharp and noticeable over a wider area than normally. Rarely does it ever subside to the normal. The heart flutters and pounds and seems often like a caged animal struggling to set itself free. Sometimes the pulse is regular and small, while the arteries beat vigorously. With all this energy the circulation is not actually increased or hastened. The condition is merely a sort of delirium cordis, representing not strength but rather lack of inhibition. There is often dilatation without hypertrophy and as a result a sound suggestive of mitral regurgitation may be heard at the apex. The statement made by Murray that "no case without acceleration of the pulse can be considered as exophthalmic goitre," may be paralleled with the assertion that every case of tachycardia which cannot be distinctly accounted for upon other organic or functional cause may be regarded not unreasonably as a case of Basedow's disease.

The goitre, its size, shape, mode of development and physical presentations is in sufficiently marked cases unique enough to render it a typical sign.

The eye symptoms, when present, are so distinctive that they are all but pathognomonic.

The tremor is less characteristic than the three preceding symptoms and yet its distribution, the fineness and rapidity of its oscillations, its persistency are, when sufficiently developed, typical enough to make this a cardinal sign. The existence of any two of these four cardinal symptoms always clinches the diagnosis. Any one of them may establish the diagnosis, if it be sufficiently well marked and especially if it be accompanied by certain other minor or doubtful symptoms and complications. All four together make the case a typical one.

b. *Doubtful Symptoms.* By these I mean the symptoms that may or may not belong to the Graves' syndrome They are not characteristic of the disease and it is an open question always whether they are primary or secondary. They are observed in other affections and hence are of little value in the making of a differential diagnosis. They are very numerous and involve nearly all of the organs, with no sort of constancy, in Graves' disease. One case may exhibit one group of them; another case may manifest an entirely different group. They are all more or less suggestive of a highly neurasthenic condition and of a greater or less degree of toxaemia. For this reason they have nothing about them sufficiently unique to render them at all pathognomic of Basedow's disease. By way of illustration, permit me to mention a few of them: Anxiety, fear, melancholy, restlessness, insomnia, impairment of memory, paraesthesiæ such as subjective sensations of warmth, boulimia, polydipsia, pruritus, cephalalgia, cramps in the legs and arms, irritable cough, tache cerebrale, dermographia, hyperidrosis and diminished electrical resistance of the skin, diarrhoea, vomiting, polyuria, pigmentation of the skin, muscular weakness, slight variable temperature, transient oedema, transient glycosuria, transient, intermittent albuminuria, amenorrhoea, general emaciation, etc.

The difficulty in determining whether these are primary or secondary manifestations of the disease is caused by the uncertainty of our knowledge as to whether exophthalmic goitre is *ab origine* an afection of the nervous system or of the thyroid gland. There is no doubt but what some of them are due to hyperthyroidism but whether others of them, as well as the overactivity of the thyroid gland, may not be due to a still more fundamental nervous trouble, we cannot yet affirm or deny. One thing we can assert, however, and that is that a diagnosis of exophthalmic goitre cannot be made upon any one or more of these doubtful symptoms.

c. *Complications.* Many complications and mere associations are, I am satisfied, too often given the dignity of being regarded as symptoms of Grave's disease. Such for example are the manifestations of hysteria, epilepsy, migraine, chorea, paralysis agitans, tetany, Raynaud's gangrene, tabes, general paresis, peripheral neuritis, muscular atrophy, diabetes, myxoedema, leucoderma, rheumatoid arthritis, Addison's disease, cardiac les-

jous, etc. For the purpose of the present paper, nothing further need be said of the complications of exophthalmic goitre except that they are very numerous, are too often erroneously regarded as direct symptoms and in the vast majority of instances are easily differentiated by the other signs that belong to themselves and are in no way characteristic of Grave's disease.

My own personal observation, as well as a rapid survey of the literature of exophthalmic goitre, confirms the general impression that typical cases are exceedingly rare. Their treatment is unsatisfactory in the major cases and uncertain in the minor ones. In the former the prognosis is usually bad though the fatality may be more or less delayed. In the latter, the prognosis is not good though it is not necessarily fatal as to life. As the latter occasionally recover without any treatment, it is always an open question as to the value of any line of treatment that may have been instituted in connection with them. This is why it is within the truth to say that the treatment of the typical cases, major and minor alike, is unsatisfactory. It also explains the saying of Sachs that barren indeed is the year in which there are not forthcoming a new pathogenesis and a new therapy for exophthalmic goitre.

Before a case becomes typical, in the narrow sense of the word, as having all of its cardinal symptoms present, it may last for weeks, months or years, bursting out in severe exacerbations and then remitting, but steadily advancing forward to the full completion of the typical picture. These are really typical but delayed cases. Their diagnosis is less certain than it is in the former cases, but it is nevertheless comparatively easy. Their prognosis can be foretold but only as a highly probable prognosis. These cases will follow the usual course in most instances.

There is a very large class of cases, however, which exhibit one or possibly two cardinal symptoms slightly developed, together with any number of doubtful symptoms. These borderland cases partially include and overlap both the typical and doubtful symptomatology of the disease. They are more numerous than they are generally supposed to be. Their diagnosis is difficult and their prognosis is as a rule favorable, highly favorable, especially under proper management. The twenty-five or more per cent of cases of Grave's disease that get well are to be found chiefly among these larvated examples of the disease. Their prompt recognition is the heaviest responsibility that the practitioner must bear in connection with this entire malady. Unfortunately there is no sign-manual by which these rudimentary, ill-defined cases can be at once detected; but because they exist, because they are numerous, because their symptomatology is confusing and because they usually get well under prompt and proper treatment, no class of cases should be more carefully studied by the physician than these.

These *formes frustes* so much referred to by Trousseau, Charcot, Marie and others, especially of the French school, are not of course *sui generis* in any way and yet there is a certain degree of similarity among them that segregates them, as it were into a class by themselves. For them to be at all capable of being diagnosed as exophthalmic goitre, they must have at least one of the cardinal symptoms. As a matter of fact, the tachycardia is the cardinal symptom that they practically all show. With the irregular yet typical heart action, there are associated usually a throbbing pulse and a peculiar general nervousness. The whole clinical presentation of these cases may resemble a mere neurasthenia with the headache, vertigo, anxiety, weariness, insomnia, aboulia, hyperidrosis, trembling, etc., that are so familiar in this disease. In true neurasthenia, however, the heart disturbance is more paroxysmal and the pulse does not remain persistently rapid. Again, a tachycardia with a slight cough, hyperidrosis, slight variable temperature, diminished chest expansion and some emaciation may lead to the thought of pulmonary tuberculosis. The absence of the pulmonic signs and the presence of the typical exophthalmic tachycardia will aid materially in the establishment of a differential diagnosis.

In these larvated types of the disease then, the tachycardia may be the only symptom

present when the patient first comes under observation. It has usually appeared rather suddenly, after a severe strain or shock in a neuropathic individual, especially a woman with hysteroid tendencies and a neuropathic ancestry. If any of the minor symptoms, such as mild psychosis, local hyperidrosis, vertigo, vasomotor disturbances, trembling and muscular weakness, reveal themselves with the characteristic tachycardia, the diagnosis is strengthened. Sometimes these cases get well without the appearance of any second cardinal symptom; sometimes, however, they develop a slight enlargement of the thyroid or a slight prominence of the eyeballs and then get well after a time. It is very exceptional for these larvated forms of the disease to ever be entirely devoid of cardiac disturbances. This might well be expected, for in the frank, typical forms, the tachycardia is the most frequent symptom, being present more or less practically in all cases. A larvated case may very rarely show only a slight enlargement of the thyroid as its one cardinal symptom. I have seen a few instances of this. Many of the minor symptoms, chiefly of a neurasthenic character, were present. Still more rarely may a slight exophthalmos be the only cardinal symptom present. If not one of the cardinal symptoms are present, the case cannot be diagnosed as Graves' disease, no matter what the character and number of the minor symptoms may be.

In conclusion, let me emphasize the fact that there are aborted, mild types of exophthalmic goitre; that they are not by any means uncommon; and that they are the most important cases for the physician's consideration from the standpoint of diagnosis, prognosis and treatment. Their diagnosis does not involve so much their mere differentiation from other diseases as it does the direct establishment of the existence of Graves' disease. This positive affirmation of the presence of Graves' disease cannot be made unless one or more of the cardinal symptoms—tachycardia, struma, exophthalmos and tremor— are present. Wanting all of these, the diagnosis is worthless, no matter what other symptoms and complications may be present. Of the cardinal symptoms, the tachycardia, and of the minor or doubtful symptoms, those of a general neurasthenic complexion constitute the more familiar grouping in these important, larvated types of exophthalmic goitre. Once the diagnosis is established in this type, the prime factors in the treatment of the case are absolute physical and mental rest and heightened nutrition.

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PLEURISY.

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Pleurisy, the most common of all postmortem findings (in over 50 per cent) is an inflammation of the pleura, rarely primary, but usually secondary to tuberculosis or other lung disease, general infections, septicemic diseases and various diseases in contiguous tissues or organs. Pleurisy constitutes about 3 per cent of internal maladies. It is susceptible of division into infinite varieties, as acute, subacute or chronic, according to its course; dry or effusive, according to its nature; primary or secondary, as to its cause; diffuse or circumscribed, as to its distribution; sero-fibrinous, hemorrhagic, or suppurative, etc. Any such classification is more or less artificial, whence it seems preferable to first describe all its symptoms and group special types later.

ETIOLOGY.

1. *Tuberculosis.* So called primary, spontaneous or cryptogenetic pleurisies are often tuberculous. (Barrs, Netter, Lemoine, Vaillard, Coston and Dubyille). Landouzy considers that 98% of all pleurisies are tuberculous, and that 60% of all phthisis cases pass through the so-called pleuritis a frigore; Netter holds that 70 to 80%, and Aschoff that nearly all "primary" cases are tuberculous. Thirty-two per cent of Osler's cases were tuberculous; 32.6% of Bowditch's and 40% of Hedges' cases. Trauma favors development of tuberculous pleurisy. The causal lesion may be recognized at autopsy in calcified bronchial glands, or small lung

foci. Tuberculous pleurisy is often bilateral. Non-tuberculous pleurisy, by causing adhesions, may favor the development of pulmonary tuberculosis. Its special relations will be discussed later.

2. *Diseases of the Lung Substance,* as pneumonia, abscess, gangrene, infarcts, tuberculosis, tumors, pneumothorax, echinococcus, tertiary syphilis, actinomycosis, etc. According to Koplik, 95% of pleurisies in children follow pneumonia. It is less frequent in diseases involving the bronchi, e. g., in grippe or measles.

3. *Acute Infections,* as rheumatism, sepsis, puerpal fever, endo and pericarditis, variola, scarlatina, measles, diphtheria, etc.; it develops in about 2% of typhoids; it may develop in secondary syphilis without lung lesions (Chantemesse and Widal), probably from toxemia.

4. *Diseases of Adjacent Organs.* (a) Intrathoracic affections, involving the ribs, spine, esophagus, mediastinum, lymph glands, diaphragm, pericardium, etc. (b) Abdominal affections, as of the stomach, spleen, liver, abscess, tumor, cirrhosis (in 16%), etc.; subphrenic abscess, suppurative or tuberculosis peritonitis (in 25%); paranephritic abscess; abdominal malignancy, etc.; pleural infection may occur by direct local invasion or by the lymph and blood streams; in neglected appendicitis, hepatic and diaphragmatic invasion occurs and later pleural infection.

5. *Tumors.* Echinococcus; endothelioma (Wagner and Fraenkel). According to Neelsen, this is an infectious process, a lymphangitis proliferans (Schwenniger), or, according to Schottelius, it is a lymphangitis carcinomatosa. The pleura swells and develops callosities or adhesions. Carcinoma, sarcoma, ecchondroma, rarely lipoma. Pleural neoplasms are far more frequently secondary than primary.

6. *Altered Blood States* (dyscrasiae); as gout, nephritis, scurvy, tertiary syphilis, frequently producing bilateral pleurisy and resulting possibly from chemical products or from reduced physiological resistance, favoring various infections.

7. *Terminal Infections.* Various forms of sepsis often carry off subjects of chronic heart, liver and kidney diseases; bilateral pleurisy is frequent.

8. *Age, Sex, Localization.* (a) Age. Most cases occur betwen 20 and 50, but no age is exempt, from intrauterine life to extreme old age. (b) Sex. Eichhorst observed pleurisy in 3% of all his male, and in 2% of all his female cases, and found the following (c) localization: Right-sided in 54% left-sided in 42%, and bilateral in 4%.

Cases following nervous disease, cold or exposure, venous thrombosis, trauma, etc., can usually be brought within the above given classification.

BACTERIOLOGY.

The etiological classification above given does not correspond to the bacteriological, e. g., suppurative pleurisy may result from the streptococcus, pneumococcus, tubercle bacillus, or less often from the staphylococcus, typhoid or colon bacilli, etc., and serious pleurisy may be due to the tubercle bacillus or to the pyogenic organisms. The frequently negative cultural results have brought out the hypotheses that chemical products, as retained urinary substances in uremia, or tuberculin, may of themselves produce pleurisy and then die. It must be remembered that cultures are usually made not from the pleura directly, but from the fluid effused from it.

The organisms found are most frequently the pneumococcus, tubercle bacillus and streptococcus; less often the staphylococcus, pneumo-bacillus of Friedlander, typhoid, colon, influenza and diphtheria bacillus, gonococcus, ray fungus, glanders bacillus, micrococcus tetragenes, micrococcocus pyogenes tenuis, etc.

1. *Purulent Pleurisy* (empyema) is oftenest due to streptococcus in adults, and to the pneumococcus in children. About 10% of empyemas are tuberculous; empyemas giving no results culturally or by inoculation are usually tuberculous, and may be regarded as a cold abscess of the pleura (Kelsch and Vaillard). The staphylococcus, micrococcus tetragenes and pyogenes tenuis, pneumobacil-

lus, typhoid and colon bacilli are infrequent factors.

2. *Serous Pleurisy* is usually tuberculous, as shown by the constantly increasing percentage of cases in which inoculations are successful. It was formerly stated that tubercle bacilli are not frequently found, and that when found, their presence suggests a direct communication with the tubercular focus. Negative results are due either to an insufficient amount of fluid (less than 10 to 20 c. c.) being inoculated, or to the effusion being due to toxins rather than the microorganisms themselves.

Eichhorst found tubercle bacilli by direct examination in but 15% of serous pleurisies, while his inoculations were positive in 50%. Jousset recommends that the fluid be allowed to coagulate, and the clots be digested with pepsin, centrifuged and then stained. The staphylococcus is a fairly frequent cause of serous effusions.

3. Most cases of so-called primary pleurisy which are non-tuberculous are due to Fraenkel's *pneumococcus*.

4. Meta, and para-pneumonic pleurisy is most frequently due to the pneumococcus, but also to the streptococcus and staphylococcus, even when no pus is formed, although mixed infections have a tendency to suppuration.

Physical Findings are absolutely essential for diagnosis, while all symptoms are ambiguous and may be wholly absent. In the main, all types have much the same signs; serous pleurisy nearly always showing friction, and fibrinous pleurisy being almost always accompanied by some exudation.

1. *Inspection.* (a) *Inspiratory retraction* of the intercostal spaces may result from imperfect ingress of air, pain, or adhesions. Epigastric retraction during inspiration is due to contraction of the diaphragm. (b) *Decubitus.* The patient often lies at first, during the dry stage, on the sound side, to avoid pain from pressure of the inflamed surfaces; and later, during the exudative stage, he lies on the diseased side, in order to allow for mechanical reasons a freer expansion of the sound lung, especially in large exudates. Traube believed that continued lying on the diseased side aggravated pain by congesting the pleural and sub-pleural veins. The patient may sit up for breath or assume the diagonal decubitus. (Andral). (c) *Ectasia* (distention) is said to occur especially in children, and is determined by mensuration and inspection. The interspaces are obliterated, the costal arch is immobile during respiration, the skin glistening, the spine curved toward the diseased side, the shoulder higher, and the nipple and scapula are further from the median line. The right chest is normally one to two centimeters larger than the left; again, the sound side usually measures three centimeters more than its normal dimensions, on account of compensatory emphysema (Gerhardt), and Verlias found that in children the sound side is usually more voluminous than the diseased side. (d) *Respiratory movement* on the affected side is decreased or absent in both dry and exudative pleurisy. Respiration is reflexly decreased on the diseased side, and is at times somewhat later than on the sound side. The frequency of respiration is increased from lung compression, pain, heart luxation, the low diaphragm, fever or edema, and paresis of the intercostal muscles. Pain alone may reflexly decrease the respiratory expansion and variation on the same side may occur, there being more movement above and less below. (e) The X-rays often, but not always, show a dark shadow. (f) Inspection also reveals cyanosis, edema of the chest wall in suppurative pleurisy, and occasionally in other forms, dislocation of the apex beat, substernal pulsation, venous pulsation. (g) Absence of *Litten's phenomenon;* and (h) rarely, pulsation of the effusion.

2. *Palpation* amplifies the findings of inspection. (a) An up and down sensation, less often a horizontal, friction rub is felt, increased by pressure, which also increases the pain and tenderness and is the more readily distinguished the coarser the rub and the more capable the chest wall of vibration. It is usually absent in obese individuals. The friction appears before the effusion, is often present during effusion, and after it is absorbed. The rub is due to roughening of the

pleura, which loses its glistening appearance, and looks like glass upon which one has breathed (Klebs), and the two raw pleural surfaces scrape on each other. It may be very transient, lasting a few hours or days, even disappearing when the patient takes a deeper breath, or it may last months or even years. (b) Pressure on a tender interspace during deep inspiration may cause a *sudden contraction* of the upper *part of the rectus muscle,* on the side of lesion (Schmidt). (c) *Vocal fremitus,* normally greater on the right than on the left side, varies according to the level at which it is tested. (a) Above the effusion it is normal. (2) Near the spine it is increased over the compressed and relaxed lung. (3) Below, it is *weak or absent,* from exudation of thick fibrin or fluid, though less change is observed in dry pleurisy.

Irregular findings are due to the presence of adhesions, bringing the lung closer to the chest wall in some places than in others. The condition of the lung and the bronchial secretion are important, whence before the test is made, the patient should be made to cough and take a number of deep breaths. The results are irregular in loculated effusions. (d) By tapping with the finger tips, we palpate the *increased resistance.* (e) Edema of the chest wall on the diseased side may be inflammatory, occurring in serous as well as purulent pleurisy, or mechanical from pressure on the azygos or hemiazygos veins, when it is usually more intense than the inflammatory form. (f) *Fluctuation* is rarely palpable, and then only in great effusions; pressing the fingers upward toward the diaphragm with the other fingers in the interspaces in exceptional cases elicits fluctuation. (g) Palpation also determines the *dislocated apex beat,* the *dislocated liver, spleen,* bulging diaphragm, and sometimes a furrow, noted by Stokes, between the diaphragm and liver.

3. *Percussion* is negative in the dry pleurisy, save in those forms in which there is a very thick fibrinous exudate, which may cause dullness and weak breathing.

In effusion (a) *dullness* is found between the fifth and eighth ribs, in the left axilla, along the sternum and over the liver on the right side, and posteriorly. Dullness may also result from old adhesions, atelectasis of the lung, great fibrin formation in the pleura, obesity, etc. As in pneumothorax, distention of the lungs and calcification of the ribs may somewhat obscure the dullness of an effusion.

In doubtful cases we percuss the apparently sound side first. According to Ferber's experiments on the cadaver, 400 c. c. of fluid are necessary in the adult for recognition, and 120 c. c. in children, yet post-mortem experiments do not meet the conditions obtaining during life. The effusion must be 2 c. c. thick to produce dullness. Sometimes, however, 200 c. c. producing dullness, one finger in width, and in children 120 c. c., producing dullness one finger wide, may be recognized. In some doubtful cases small amounts may be detected, as proven by puncture especially in thin thoracic walls, as in children and women. Light percussion is necessary in small effusions, lest other normal parts be brought into vibration. Before percussion the patient should breathe several times deeply, to eliminate partial collapse of the lung, and impaired ingress of air from bronchial secretion.

Percussion is absolutely essential to diagnosis. Not merely the audible dullness should be regarded, but also the *palpable sense of resistance,* which may be noted on light percussion and with the ears closed. The dullness is marked, amounting to distinct flatness.

In larger effusions, the *flatness,* at first posteriorly located, is noticed to increase along the spine, and also laterally. In massive exudates flatness may reach from the lower limit of the pleura to above the clavicles.

The dulness is usually highest posteriorly, but adhesions may cause an opposite condition. The line of dulness is not even, but describes a parabolic curve, due, according to Gerhardt, to the uneven thickness of the chest wall, or, according to Eichhorst, to irregular adhesions. If the fluid has effused while the patient was in bed, the highest level of dulness is in the axillary line; if it developed while he was up and around, the

upper level is horizontal. Dulness is found one to two centimeters higher than the upper level of the fluid, due to plastic exudate.

(b) Right-sided effusions merge with the liver dulness, but the lower limit of left-sided effusions can usually be determined, because they *invade Traube's semilunar space.* This "half moon" space lies between the fifth and sixth costal cartilages above, and tenth rib below, representing the supplementary pleural space, and designated as the half-moon space because of the curve at its upper portion, produced by the apex of the heart; its tympanitic note is decreased or replaced by flatness in left-sided effusions without adhesions. Dulness here may not be confused with the spleen, since there is no pulmonary excursion in pleurisy, and the dulness lies more toward the heart than toward the splenic region. Scybala, food in the stomach or bowels, etc., may also impinge on Traube's space.

(c) *Respiratory excursion is absent* in effusions of any size.

(d) *The change of the upper line of dulness with change of position* has been emphasized by Gerhardt, Rosenbach, Da Costa, and most writers. It is usually stated that change of position causes variation in the level of the effusion, and that the level changes in 55%, changes very little in 30%, and none in 15% of cases. According to personal experience, it is difficult to detect on account of the adhesions usual at the level of the fluid. The line of dulness does not change rapidly on mere change of posture; the patient must lie some hours in another posture before any alteration of the upper level appears.

(e) *A vertical strip of the tympany* along the spine in large exudates, often measuring three centimeters wide, may be detected; it is due to compression of the lung. Tympany in the lower part of the left chest may result from gaseous distention of the stomach and intestines.

(f) Tympany is observed over an upper lobe from compression or relaxation of the lung. First observed by Avenbrugger and Skoda, it is usually called the *Skodaic note.* Rosenbach explains it by tension of the intercostal muscles during inspiration.

(g) *"Cracked-pot" resonance* occasionally appears on short forcible percussion over the upper lobe, and results from sudden expulsion of air through the rima glottidis.

(h) *William's tracheal note* is observed on the left more than on the right side, and chiefly when the entire side is dull. It is best obtained in the first and second interspaces, and is due to transmission of percussion vibration from the fluid to the trachea, giving a tympanitic note. A change of pitch with opening and closing of the mouth, like that observed by Wintrich, in lung cavities, is occasionally present.

(i) *Dislocation of other organs.* There is no direct parallelism between the amount of exudate and the amount of luxation. Luxation, of course, is absent if the organs are adherent. The heart is usually dislocated *in toto,* and but seldom suffers torsion or change of the direction of its axis. The right ventricle may be seen to pulsate to the right of the sternum, even in the right nipple line in left-sided effusions. In right-sided effusions the apex is pushed to the left and downward, since the diaphragm is lower. The liver is less easily dislocated than the heart, but in right-sided effusions is pushed down, and the left lobe tipped somewhat upward, though both lobes may be dislocated downward in very extensive pleurisy, as noted by Traube and Fraentzel. In the left-sided effusions the spleen is dislocated downward and forward; undergoes some torsion and may stand perpendicular to the costal arch.

4. *Auscultation* is most important in dry or effusive pleurisy.

(a) *The friction rub* (v. Palpation) may be hard or soft, is superficial (i. e., close to the ear), resembling the sound made by scratching the finger on the ear, or resembling the crunching of snow under the shoe; it often appears in the first twelve hours. It is most frequent during inspiration, but very often is detected in both inspiration and expiration, seldom during expiration alone. Inflammation of one leaf of the pleura is sufficient for its production. It may disappear after several long breaths, which smooth the pleural roughening. The

interrupted rub is due to pleural irregularities. It may be increased by pressure, and is subject to no law as to its duration. Wintrich heard a pleural rub over four years, and Gerhardt one lasting six years. It is heard most frequently over the antero-lateral portion of the chest, and is detected better with the stethoscope than with the naked ear, but may sometimes be heard at a distance of several feet. If it is apical, tuberculosis is specially suspected. It may be also present in miliary tuberculosis (v. Jürgensen), and in tumors of the lung or pleura, without actual pleurisy. It commonly becomes less clear when exudation develops, and its reappearance may indicate beginning of absorption, or extension of the process at the level of the fluid.

(b) *The breath sounds are modified* not only by the effusion, but by the condition of the lung, strength of the breathing, and conditions of conduction existing in the pleura and thoracic walls. In general, especially in men and children, the *respiratory sounds are weakenend,* even in fibrinous pleurisy, from repressed breathing and perhaps from pain alone; *cog-wheel breathing* is common.

In moderate effusions three zones are observed: (1) Absent breathing in the lower parts from compression of the lung by the exudate, which also lessens the conduction of the vesicular breath sounds. (2) Bronchial breathing in the middle zone, from moderate collapse of the alveoli of the lung, with fair conduction through the bronchi. (3) An upper zone of sharp or exaggerated vesicular breathing. In larger effusions the lower zone extends higher and bronchial breathing may be heard near the clavicle, or between the scapula and spine. In the largest effusions, the breathing is indistinct everywhere, with areas of metallic bronchial breathing, when the lung is wholly collapsed. Amphoric breathing exceptionally results.

(c) *The voice sounds are absent* over the fluid, or over very thick plastic exudate. Here and there may persist where islets of the lung are adherent to the chest wall.

(d) *Bronchial breathing* and increased fremitus may be present, as in pneumonia, especially in children with empyema, under the following conditions: The chest wall is not the seat of edema, the bronchi are patent, there is no great fibrin deposit on the pleura, and the lungs are retracted, but not compressed. The bronchial breathing may be as intense as in pneumonia or tumor.

(e) *Bronchophony* depends upon the same conditions as bronchial breathing, viz: Patent bronchi, moderate retraction of the lung, and conditions favoring good sound conduction..

(f) *Aegophony,* an exaggerated bronchophony, was described by Laennec, and is found chiefly in middle-sized effusions, usually at the level of the fluid. It occurs less often in caverns and infiltrations. In larg effusions it is rare, the compression being too great. Its cause is the voice sounds passing through the compressed smaller bronchi to the chest wall, and may be present when the exudate is increasing or decreasing at a given point.

(g) *Baccelli's symptom* is the "whispering voice," and is heard on the diseased side. Baccelli thought that it was observed more in serous effusions, but it also occurs in other pleurisies, in chronic induration of the lungs, pneumonia, hydrothorax and cavities.

(h) *Heart.* A wide propagation of the heart tones speaks more for consolidation than for effusion, but if we exclude consolidation, hearing the heart tones more widely than normal suggests dislocation of the heart by an effusion. Murmurs from bending of the large vessels by dislocation of the heart may be heard as well as accidental murmurs, resulting from a weakened heart, toxemia, or high temperature.

5. *Diagnostic Puncture* settles the following questions: (a) Whether pleurisy exists; or (b) pneumonia; or (c) hypostasis, tumor, atelectasis, etc.; (d) it determines the character of the fluid; (e) the prognosis; (f) puncture with aspiration is an important therapeutic measure. *In all doubtful cases puncture is indicated.*

Negative results from puncture may re-

sult from a thick fibrin deposit, and thick exudate, failure to reach an encapsulated effusion as an interlobar pleurisy, and the membrane may be pushed in before the needle, so that the fluid is not reached. In negative or dry taps, after withdrawal of the needle, it should be examined to see that no plug of fibrin or cells has collected in the needle. If a plug is obtained, it should be emptied upon a glass slide and examined under the microscope. Care should be taken that no carbolic acid or alcohol remain in the syringe or the needle which may cause coagulation, thus explaining some dry punctures. A puncture should be made with a large needle. When the needle is introduced, we may feel resistance from a calloused pleurisy or an indurated lung. Often after introduction of the needle the point may be felt to be freely movable as in a cavity. Sometimes the results of puncture differ according to the level of the puncture. Rarely serum may be obtained from a high puncture, and a cellular deposit from a lower puncture, the cells settling to the bottom. Again, puncture in different localities may show serum in one; hemorrhage, pus, etc., in another, sac. Bacteriological examinations made with 10-20 c.c. of the serum, give frequent results and over 50% of the serous cases are proven tuberculous on inoculation.

The special chemical, bacteriological, cellular and other characteristics will be discussed under individual forms.

Symptoms.

Symptoms may be absent (*latent pleurisy*); if present, they are not distinctive, and there is no fixed relation between the symptoms and physical findings.

(a) The temperature is variable. Its rise is usually gradual, and seldom with a rigor, as in pneumonia. There may be no temperature for weeks even in purulent exudates, especially in marantic, diabetic and anemic subjects, and in terminal infections. When present, it may be continuous, or more frequently subcontinuous or remittent. Temperature is no positive index as to the character of the fluid. Exacerbations of temperature are important prognostically, especially when the appetite is poor and no change occurs in the physical findings. No recovery is to be expected till the temperature remains normal for some time. A sudden rise and fall, like a crisis, is exceptionally observed just before resorption.

(b) The *pulse* is increased; it is sometimes small, and occasionally of the paradoxical type.

(c) *Dyspnea* is seldom a part of pleurisy, for effusions may attain enormous proportions without respiratory difficulty, particularly when gradual in development. Dyspnea is usually referable to coincident bronchitis, pneumonia, lung congestion (Potain), pericarditis, arterio-sclerosis, nephritis, or to bilateral pleuritis.

(d) *Pain* is usually an initial symptom. It is in no way proportional to the physical findings. It may be absent, when auscultation shows a marked rub. Its character is usually dull, tearing, stabbing, and sometimes very severe, but it may be crampy or colicky. The pain is usually pleural (Cruveilhier,) but may be neuralgic or due to neuritic or muscle changes. The pain is observed in the side, well down over the ribs, over the liver, epigastrium, or low in the back, and sometimes may radiate to the sound side (Laennec and Gerhardt), into the arm or spine, or into the abdomen, especially in children, simulating appendicitis, etc.

(e) *Coughing*, an early and frequent symptom, results from accidental bronchitis or oftener from pleural irritation. It may appear after change of posture or tapping. It is usually unproductive.

(f) *Other Symptoms.* Anorexia, vomiting, headache, difficult swallowing (Ferber), due to involvement of the foramen esophageum, marked sweating, next in importance after sepsis and rheumatism. The urine is scanty, but increases during resorption, when peptonuria and transient albuminuria are often found (Courmont and Nicola).

The skin may be pale and cachectic when pus forms; red from high temperature; cyanotic from poor oxygenation, or suddenly pallid from hemorrhage into the pleura

when there is a sudden increase of fluid. Emaciation is common in chronic pleurisy of the tuberculous or purulent type.

SPECIAL FORMS.

A. CHARACTER OF THE INFLAMMATION.

In 790 cases Eichhorst found serous pleurisy in 81%, fibrinous in 12%, purulent in 5%, ichorous and hemorrhagic each in 1%.

1. *Serous pleurisy* is the prototype of pleuritic disease. As stated, most cases are tuberculous. The fluid is lemon-colored. Its specific gravity ranges between about 1015 and 1023, limits which Méhu considers characteristic of inflammation. Albumin is present, 3 to 7%; sugar is frequently present; glycogen, urea, uric acid, bile, etc., are inconstant constituents. The fluid clots after puncture. All varieties of pleurisy, serous and otherwise, contain white blood cells, red blood cells, and endothelial cells; the cells may show some fatty degeneration. Much emphasis has been placed on the character of the leucocytes found in tuberculous pleuritis; Widal and Ravault especially (1900) insist that lymphocytes are characteristic of primitive pleural tuberculosis, and afford early diagnostic data (long before inoculation results are available); the fluid must be examined before it coagulates; in other pleurisies, the polymorphonuclears prevail. The same writers believe that lymphocytosis is not present in the pleurisy secondary to well-developed phthisis. The tuberculous nature of pleurisy is established by inoculation tests, positive in 50% to 66%; apical or other serous membrane involvement, and by the finding of tuberculosis in cases of sudden death in the course of pleurisy (Landouzy, Dujardin-Beaumetz, Dieulafoy, Kelsch, Binet, etc.). It is well to suspect, at least, the tuberculous nature of all so-called rheumatic pleurisies (pleuritis a frigore), although cold may sometimes produce pleurisy in both man and beast. The sputum and lungs should be carefully watched in such cases for some time (see prognosis).

2. *Fibrinous pleurisy* usually shows some fluid, serous or purulent, if systematic punctures are made.

3. *Purulent or Suppurative Pleurisy* (empyema) usually begins as a serous exudate, which soon becomes opaque and purulent. The tuberculous form has been discussed. The most frequent types are (a) the *streptococcic,* observed chiefly in adults, the fluid being thin and separating on standing into an upper serous layer, and a lower denser layer, fibrin formation being slight; and (b) the *pneumococcic,* more common in children, the fluid being more homogenous, and viscid, like the "laudable" pus of the early writers, the fibrin and membrane formation being abundant, the odor peculiar, oftener accompanied by endocarditis, pericarditis, and meningitis, more often febrile, and more susceptible of spontaneous recovery than the streptococcic form. The fact that the pneumococcus has far less pyogenic properties in the lung than in the pleura has excited frequent comment. Microscopically, we find various bacteria (v. bacteriology), polymorphonuclear white cells, often fatty, and sometimes cholestearin and the Charcot-Leyden crystals. The distension may be enormous, Krause reporting twenty-two pounds of pus in one case.

Empyema pulsans (Walshe) is not frequent. Ninety-five per cent of all pulsating effusions are purulent, while but 5% are serothorax; 93% are left-sided. A pulsating tumor the size of the first may be noticed, usually, but not always, decreasing during inspiration, or the effusion may simply pulsate behind the ribs. In either case the pulsation may be expansile. The pulsating tumor is usually between the second and fourth ribs anteriorly, but may be seen lower, on the side, or even below in the back. Pulsation ceases after aspiration. Pulsation is not a sign of necrosis of the pleura, as some would have it, and the explanations advanced are unsatisfactory, as coincident pneumothorax (Féréol), atelectasis of the lung (Comby), adhesions and paresis of the intercostal muscles (Traube, Keppler). The most apparent conditions are considerable cardiac energy, massive exudation and

paretic intercostal muscles. Empyema pulsans may be confused with *aneurysm*, which is far slower in its evolution, far oftener located above and to the right, and has its own signs, as murmur, thrill, etc.; with pulsating abscess; pulsating tumor of the lung, and pulsating pneumonia. Aneurysm may coexist with pleurisy. Expansile palpation of the chest wall has been twice observed without exudation, aneurysm or any organic change.

Empyema may rupture externally, *Empyema necessitatis*. Rupture is usually along the sternum or lower ribs. Gravitating abscesses may result as pulsating tumors in the groin or loin, which may be confused with aneurysm or spinal caries. *Rupture into the lung* may cause suffocation during sleep. Fistulae, hectic and amyloidosis, are frequent sequelae.

Hippocrates was acquainted with the "mouth full" expectoration, and also with the fact, later described by Traube, that pus may penetrate the lung like a sponge without perforation or pneumothorax. Unverricht thinks, however, that perforation into the lung without pneumothorax is best explained by a small opening which allows the escape of fluid into the lung, but not the escape of air into the pleura, because of the higher tension in the exudate.

4. *Putrid pleurisy* is usually associated with gangrene of the lung, pneumothorax, esophageal carcinoma, appendicular abscess, and kindred lesions. The fluid is extremely fetid; fatty, leucin, tyrosin, cholestearin, and sometimes hematoidin crystals are found; the colon bacillus and other gasogenic bacteria are frequently present.

5. *Hemorrhagic pleurisy* is usually serofibrinous, tinged with blood; five to six thousand red cells per m.m.^{3} are necessary to produce a reddish tinge. It is seldom suspected before puncture. (a) Most cases are *tuberculous*. Dieulafoy speaks of these cases as having "hemoptysis into their pleura." After puncture the fluid frequently returns, but recovery is possible. (b) Some are *cancerous*. Moutard-Martin has found hemorrhagic pleurisy in but 12% of pulmonary-pleural cancer; pain, dyspnea, luxation, and rapid pulse are frequent symptoms; the fluid is dark red, contains little fibrin, and usually reappears rapidly, a case of Desnos' being punctured thirty times in six months. (c) Some cases occur in liver cirrhosis, of which Laennec published the first case in 1826; in nephritis; hemorrhagic fevers, or exanthemata, etc.; profuse hemorrhage into the pleura was called pleural hematoma by Wintrich, and pachypleuritis hemorrhagica by Chouppe, from its resemblance to hemorrhagic pachymeningitis.

6. *Chyliform pleurisy* occurs chiefly in pleural neoplasms or tuberculosis; the fluid is milky, contains fatty droplets, fatty cells, and albuminous detritus in suspension; cholestearin, lecithin, etc., may be found. (Sometimes the exudate is colloid.) In multilocular exudation, where one pocket contains pus, another serum, still another hemorrhagic fluid, etc., Galliard speaks of polymorphous pleurisy.

B. LOCATION OF THE EXUDATE.

1. *Pleuritis Diaphragmatica* produces much subjective disturbance. Radiating pain is often experienced, which may resemble angina pectoris (Andral). Pain and tenderness in the epigastrium and between the tenth rib and the xiphoid is pathognomonic, according to Guèaneau de Mussey. Schmidt's respiratory abdominal reflex, an inspiratory spasm of the upper part of the rectus muscle, rather points to phrenic involvement.

Dysphagia from inflammation of the foramen esophageum may result. If left-sided, vomiting and singultus may be noted, and if right-sided, icterus is not uncommon. Cough may occur spontaneously or on pressure. Pressure in the lower interspaces near the spine elicits tenderness; tenderness over the cervical portion of the phrenic nerve may be noted, together with reflected pain along the mamillary branches of the cervical nerves to the shoulder. Dyspnea is usually great, temperature usually lacking, the lower chest moves but little, the respiratory murmur is very weak and friction may be heard over the liver or in the half-moon space of Traube. If no exudate results, the

diaphragm may remain high. Fluid may accumulate between the diaphragm and lung without reaching the chest wall, and therefore without causing dullness. Fibrinous is more common than serous effusion.

2. *Interlobar pleurisy* is difficult to diagnosticate, as there is less surface dullness. The amount of exudate may be a few up to 200 or 400 gm. It occurs most frequently after acute pneumonia, or in tuberculosis. Previous pleurisy may favor its development by marked adhesions obliterating the general pleural space. As Laennec noted, it is almost always suppurative. Its early diagnosis is uncertain; fever, rales, cough and dyspnea suggesting some lung lesion; later, a zonular dullness is found conforming to an interlobar fissure, bounded above and below by a normal or somewhat over-resonant note. The heart may be pushed to the right in left-sided localization, but the liver is not luxated by right-sided localization. The symptoms may be like those of lung abscess, from which during life differentiation is sometimes impossible. It may be shown by the X-rays. Large effusions may break internally, pus being suddenly detected in the sputum. Hemoptysis may occur. Puncture is attended with more danger as the lung may be infected by the needle. Spontaneous recovery is infrequent.

3. *Mediastinal pleurisy* was described by Laennec and Andral. It is most often tuberculous or pneumococcic, and oftener purulent than serous. The symptoms of lung compression are less distinctive than those of compression of mediastinal tissues. There may be wheezing, dyspnea, dysphagia, dysphonia, fever, intrathoracic, oppression or pain, a pertussis-like cough, enlarged thoracic veins from azygos compression, deviation of the larnyx or trachea, dullness between the scapula and spine, and a suggestive X-ray picture. The sudden onset and febrile course differentiates from aneurysm, tumor, adenopathies, etc. The outlook is serious without operation.

4. *Peri- (para) pleuritis* (Wunderlich, Bartels, Billroth) is inflammation outside the parietal pleura, and is usually purulent. Some cases follow glanders, but most are due to actinomycosis. Fistulae and the evacuation of the characteristic sulphur granules are common. The symptoms are more local and irregular than in pleurisy; fluctuation more frequent. Heart dislocation and lung compression are rare; the respiratory excursion is free, and lung resonance may be elicited beneath the dullness. Metastatic inflammation, perforation and burrowing are common.

c. *In children* pleurisy is attended by more general symptoms; higher temperature, higher pulse and respiration rate. Bronchial breathing is more frequent, there is less dullness, less luxation, less friction, and it often follows pneumonia, where in the majority of cases the empyema is more benign.

According to Lemoine, metapneumonic pleurisy is distinguished from parapneumonic in being slower in its course.

Course.

The *course* of uncomplicated pleurisy averages three to six weeks, acute cases lasting two, subacute three to eight, and chronic cases, eight or more, weeks. No general rule can be laid down, and the onset, whether mild or stormy, is no index of the issue. No cycle is seen in any form of pleurisy.

Pleuritis acutissima, with high fever, typhoid symptoms and early death is fortunately rare. Friction below and in front rarely attends great effusions, and therefore, after exclusion of tuberculosis, carcinoma or pyemia, the prognosis is relatively better. In the average case, dry pleurisy precedes and succeeds exudation. Recurrence and exacerbations are poor prognostics. Death more frequently follows from exhaustion and gradual cardiac failure. Partial absorption with persistence of temperature or dyspnea speaks for tuberculous pleurisy. Rheumatic pleurisies heal more readily than tuberculous. I have seen recovery even in secondary carcinomatous pleurisies.

Issue.

A. *Resorption* may occur and even purulent (pneumococcic) pleurisy may exceptionally resorb in part without operation, or rupture, leaving inspissated caseous accumulations. Serous pleurisies may resorb after

three to six months, followed by friction well down over the chest, which lasts some time.

B. *Adhesions.* The thickness of pleural adhesions is more important than their extent. Universal obliteration of the pleura by thin adhesions often causes no trouble. Retraction of the lung, compensatory emphysema, pain, thoracic oppression, obliteration of the complementary pleural space, dulness, decreased vocal fremitus and breathing, failure of Litten's phenomenon, and decreased respiratory excursion, and stagnation of bronchial secretion may be observed, when the adhesions are thick. If there is exudate around the heart, the apex beat may increase during inspiration, as also occurs in bronchial catarrh (Eichhorst. Failure of the right heart with stasis may occur, yet most extensive adhesions sometimes exist without any cardiac changes. Peritonitis, mediastinitis, induration and obliterative pericarditis may complicate the case. In some instances the pleura calcifies or ossifies, leaving a deposit of 3 centimetres or more.

C. *Sudden death* from syncope after exertion, coughing or pressing efforts, as urination and defecation, may occur. Sudden death occurs from paralysis of the left ventricle, cardiac thrombosis, pulmonary edema, nicking of the aorta, compression of the cava at the diaphragm (?), and rarely pulmonary embolism from venous thrombosis. Rarer still is rupture of fluid into the lung or bronchi, drowning the patient during sleep; death from hemorrhage into the effusion, from pneumo-thorax, brain embolism, etc.

D. *Retractio thoracis* is signalized by increased resistance, decreased fremitus, decreased circumference of the side affected, and often by bronchiectasis. The percussion note is dull and the breathing usually decreased, but sometimes bronchial. The factors involved are atmospheric pressure, contraction of the pleural scars and extension of the inflammation into the lung, pleurogenous (interstitial) pneumonia, also known as pleuritis deformans, which sometimes divides the lung up into lobes or islets.

E. *Changes in Other Organs.* In retraction, other organs may be dislocated. The liver may be higher when the right side is involved, and in left-sided retraction the lung may shrink away from the heart, the spleen and the heart may lie higher and Traube's space may be increased. Organs, too, displaced by exudate may rarely remain luxated after the exudate absorbs. Pleural callosities may produce recurrent laryngeal paralysis, which may also follow the pressure of a fluid exudate or enlarged glands. Other complications are acute and chronic infiltration in the lung; inflammation and degenerative changes in the musculature of the chest; extension to other serous surfaces; septico-pyemia; stasis in the liver, stomach, extremities, etc.; hemorrhages into the skin; chronic nephritis; amyloid change; pulmonary, glandular, genito-urinary or miliary tuberculosis.

Scagliari, quoted by Eichhorst, reports 47 cases of paralysis of the arm, probably due to brachial neuritis.

Prognosis.

1. The immediate mortality is about 5%. A forecast cannot be made in a week or two.

2. The *etiology* is an important factor.

3. The *nature of the fluid.* Fibrinous pleurisy (save at the apex of the lung) offers the best outlook. Prince Ludwig Ferdinand ranks the effusive forms as follows: (a) best in metapneumonic serous or purulent pleurisy; (b) next best in serous pleurisy due to the staphylococcus; (c) next in staphylococcus empyema; (d) least favorable in tuberculous, fetid, putrid, etc.

The prognosis is generally poor in hemorrhagic, chyliform, peracute and bilateral (generally hemorrhagic or purulent) effusions. The outlook is better in effusions which contain considerable solid constituents (Méhu and Bernheim); effusions poor in solids are apt to recur. When by cryoscopy the freezing point of the exudate is below that of the blood, spontaneous absorption is unlikely (Rothschild). Since Hippocrates, the belief has prevailed that right-sided are less favorable than left-sided effusions.

4. *Temperature* persisting, sweats, anemia, recurrences, external rupture, etc., are unfavorable.

5. *Sudden death* is more common than is usually appreciated. I saw three cases in 1903 alone.

6. *Ultimate prognosis.* Opinions vary. Eighty-seven per cent become tuberculous in one to two years (Fiedler); 33% die in five years (Bars); 66% are curable (Osler); 15% die of tuberculosis; 90% are in good health after two to five years, and 80% are healthy after five years (Cabot).

Diagnosis.

Diagnosis is based on the physical findings alone. Diagnosis of the pleurisy is the first step, while the second is the determination of its cause.

Differentiation.

A. *Pleuritis sicca* is established certainly only by feeling or hearing the friction rub.

1. *From râles* The crepitant râle is largely inspiratory, appearing as a shower of small râles at the end of inspiration. Bronchitic râles or bronchi are continuous. Coughing and deep inspiration alter or remove râles, and may alter the fremitus. While the pleural rub is increased by pressure and deep inspiration. The pleural rub is less extensive. It may disappear after a number of deep inspirations, by the two surfaces becoming smoother for the time being.

2. From *sacculated breathing* and a crackling in the muscles on deep breathing, which are symmetrical.

3. From *intercostal neuralgia,* which is intermittent, occurs in typical attacks, and is limited to the inter-spaces. Valleix's points are usually, but not always, present. When found, they exist at the angle of the ribs, in the midle of the axilla, and anteriorly, corresponding to the points of exit of the posterior, lateral and anterior perforating branches of the intercostal nerves. Intercostal neuralgia is increased less on deep breathing than is pleuritic pain.

4. From *caries of the rib,* in which pain is localized directly over one rib, and not between the ribs.

5. *Rheumatism of the thoracic muscles.* Differentiation may be very difficult, as both affections may induce pain on breathing, tenderness and disturbed breathing. There may be a history of cold, exposure, or repeated attacks. There is usually no fever, nor cough. Faradization decreases the pain. Movement increases the pain more than in pleurisy.

6. The rub of *pericarditis* (q. v.) is more distinctly cardiac, depending upon the cardiac movements. On holding the breath, a pleuritic rub, heard over or near the heart, decreases after five or six heart beats. On deep inspiration the pleural rub disappears, and the pericardial rub is increased. Confusion is most likely when pleurisy is found over the lingual lobe and left border of the heart, while pericarditis most commonly produces a rub at the base of the heart, especially over conus pulmonalis arteriosus.

B. *Pleuritis humida.* (1) From *infiltration of the lung substance* (see pneumonia). The fremitus is decreased in pleurisy; increased in consolidation. If a bronchial plug exists in consolidation, decreasing the fremitus, it can usually be dislodged by coughing. In consolidation the dullness often corresponds to one lobe; the pleuritic dullness increases downward, though the upward border of a pneumonia is sometimes irregular. Only when pneumonia is very great is there any luxation of the heart or involvement in left-sided pleurisy of Traube's space. In consolidation there is a close parallelism between the intensity of the bronchial breathing and the degree of dulness. When there is very slight bronchial breathing, it is probably not pleurisy, although it may exist in some cases. The sputum, the longer course of pleurisy, dislocation of the heart, liver, spleen, etc., the infrequency of chills in pleurisy, the use of the Cyrtometer, the solution by lysis, speak for pleurisy.

Aegophony occurs more frequently in pleurisy. Crepitant râles may be heard in pleurisy along the upper border of the fluid, but are usually transitory. Exploratory puncture is the final test, and also determines the nature of the fluid. The presence of blood, carcinoma cells, streptococci, pneumococci, tubercle bacilli, etc., are diagnostic aids.

(2). *From tumors of the lung.* Here cachexia, narrowing of the chest behind on

the one side, and the characteristic exudate obtain; the latter is often brown (Fraenkel), sometimes chyliform, and contains fat globules (Quincke), and degenerated large cells, which may show mitoses. The glands above the clavicle may be enlarged, as well as those in the mediastinum, producing recurrent laryngeal paralysis, etc. Tumor particles are rarely obtained by puncture or from the sputum, and are only found in carcinoma, since sarcoma rarely ulcerates. In suspected tumors of the lung a trocar rather than a needle should be used. In puncture there is more resistance in tumor. Unverricht observed carcinoma developing at the seat of puncture. In tumors there is less displacement, less invasion of Traube's space, and less widening of the chest than in pleurisy, while the breathing is often bronchial, the flatness intense, and the fremitus increased.

(3). *Hydrothorax,* usually described as bilateral, nevertheless may be unilateral, especially in heart and liver disease, when especially right-sided hydrothorax is observed. Sometimes unilateral hydrothorax is explained by obliteration of the other pleural cavity by adhesions. The fluid often shifts its level on change of posture, which does not occur in pleurisy. Salicylic acid, iodine, and potassium iodide are said to pass readily into transudates, and slowly and in small amounts into exudates (Rosenbach and Pohl), but this claim has been disproven by Weintraub, Leuch and Feldmann. The iodine is detected by adding nitric acid and shaking with chloroform, which is colored reddish.

In hydrothorax, the specific gravity is below 1014, the albumin under 3%, and the sediment shows few while cells and some endothelial cells, which are not pathognomonic of hydrothorax, as has been claimed. Bacteriological tests are negative.

(4) *Hemothorax* is determined only by puncture.

Circumscript pleurisies in some instances require differentiation.

(5) from *pericarditis,* but they are more irregular in outline and the apex beat is not altered; there is no cardiac insufficiency, pericarditic friction, etc.

(6) Or from *lung cavities,* which give dullness when full of secretion, and resonance when the secretion is voided; the fluid obtained by puncture (under a wrong diagnosis) has a higher specific gravity and a large per centage of fat.

(7) From *splenic tumors.* Respiratory excursion and palpation of the lower edge of the spleen, etc., determine the differentiation.

(8) *Liver enlargements* are rarely solely upwards, save in echinococcus and abscess of the convexity, which are prone to occur anteriorly, while pleurisy is more frequently detected posteriorly. In tumors of the liver there is usually respiratory excursion, which is absent in pleurisy. In rare instances there is a furrow between the costal arch, and the liver, when pleurisy pushes the liver downward (Stokes).

(9) From *subphrenic abscess,* which may be intraperitoneal, as liver abscess, or extraperitoneal, e. g., paranephritic. The liver stands higher in the chest because of the paretic diaphragm. There is a history or the physical signs of previous disease of an abdominal organ. The needle thrust toward the abscess reaches the pus only deep in, and in the lower interspaces. The pus has frequently a fecal odor. The manometer shows increased pressure during inspiration, and decreased pressure during expiration, the converse of the findings in pleural effusion.

Treatment. Etiological treatment applies only to rheumatic and syphilitic forms.

1. *Fibrinous Pleurisy,* which remains fibrinous, or the fibrinous or first stage of exudative pleurisy. *Pain* is the main indication. *Morphine* may be given in severe cases, specially when coughing is troublesome. The ice-bag, blisters, cups, and hot fomentations give little relief in acute pain. The pleura should be splinted by three or four strips of *adhesive plaster,* a couple of inches wide, overlapping the median line before and behind, by about three inches, running around the chest horizontally and obliquely, and applied during expiration with considerable pressure, that the lung in its lower part may be well immobilized; oxide of zinc adhesive is least irritating to the skin. Personal ex-

perience with the early use of salicylates advocated by Aufrecht and Fiedler has not been sătisfactory. The patient is kept abed. Leeches sometimes relieve the pleural congestion.

2. *Serous pleurisy* is treated abed, meeting the cough, fever, etc., expectantly. Laxatives are chiefly given to obviate straining at stool, which may induce cardiac weakness. When, at the end of the second week, the effusion shows no sign of resorbing, various measures are advocated. Schroth's treatment consists in limiting the amount of fluid ingested to about 1,000 c.c. daily, but it has few adherents, as exudation is an active, not a passive, process. Tincture of iodine is applied, but is seldom useful, and when old is a distinct local irritant: Potassium iodide, digitalis, drastics to produce copious evacuations, pilocarpine, combined with cognac to support the heart, and sweats are often given. We cannot agree that any of these measures are helpful. Transudates may be removed in this way, but not exudates.

Trousseau's indications for aspiration were: (1) the vital indication (when life is threatened by large exudates); (2) moderate effusion with slow resorption, and (3) persistent or residual exudates.

We believe that early puncture (thoracocentesis) and aspiration are indicated in every case where 2,000 or 2,500 c.c. are effused, whether the temperature is still high or not, whether pressure symptoms or dyspnea are present or not. About this amount causes some dislocation of the heart, liver or spleen, some compression of the lung or some ectasia, as shown by the cyrtometer. Intrathoracic pressure may cause sudden death, sometimes without any warning of cardiac insufficiency. Early puncture does not irritate the pleura, nor favor recurrence or suppuration. Early and repeated puncture obviates lung compression and atelectasis, and compression and torsion of the large arteries. Aspiration was first advocated by Wyman and Bowditch, of Boston, over fifty years ago.

Method. After the usual surgical antiseptic measures, a small trocar or large aspirating needle is introduced, which has an elbow connecting with a rubber tube to siphon the fluid to a vessel below, or connecting with a bottle which can be exhausted by a pump. There is no absolute rule as to the site of puncture, which is governed solely by the physical signs, e. g., adhesions holding the lung to the surface vitiate any set law; usually fluid is best obtained between the scapular and post-axillary lines, and low down in the chest. The trocar is introduced suddenly to avoid bending of the spine, which narrows the interspaces, and is introduced perpendicularly to the chest wall, not obliquely, so as to avoid the intercostal artery, from whose injury we once saw fatal hematoma and hemothorax. Whiskey and hypodermics should be at hand against syncope. The pump is necessary in but 10% of cases, the fluid usually siphoning readily. The fluid, if pumped, should be withdrawn gradually. The *amount* removed need not be great, as often moderate relief of intrapleural tension promotes absorption. The limit is set, somewhat arbitrarily, at 1,000 c.c. (Naunyn and Dieulafoy), or 1,500 to 1,600 (Fraentzel and Bowditch). Nearly complete evacuation favors the accidents enumerated below, and is thought by Litten to favor miliary tuberculosis.

Aspiration is discontinued when the exudate becomes bloody (from lung injury), friction develops, pain is felt, or coughing (from congestion of the relaxed lung) intervenes. *Repetition* of puncture depends on results; it may be repeated every two or three days *Favorable results* are showing and strengthening of the pulse, relief of oppression, increased diuresis, improved appetite, etc., but above all relief of pressure on the lung and absorption of the exudate.

Unfavorable results are syncope, due to cerebral anemia, which in turn results from restoration of circulation in the collapsed lung, a relatively uncommon incident; pulmonary edema; the albuminous expectoration described by Terillon, Besnier, Johnson, Duffin, Scriba, etc., which is due to the sudden withdrawal of too much fluid (2 to 5 litres) at one tapping (it should take one-half hour to evacuate 1½ litres (Fraentzel)); edema pulmonum is best treated by a hypodermic of morphine, gr. ¼, which

may be given before aspiration; sudden death from pulmonary embolism or cerebral embolism, which latter results from discharge of clots from vessels in the relaxing lung, and causes the so-called "pleuritic hemiplegia"; some of these cases are hysterical hemiplegia; pneumothorax; injury to the heart, liver or spleen. When repeated punctures fail, one considers operation (as in empyema).

3. *Empyema* demands operation (practiced by Euryphon, and after him by Hippocrates) in all cases. Some cases may recover spontaneously, but no reliance is placed on this issue. Some advocate treating tuberculous empyema without operation, as Volkmann managed other cold abscesses. Krönlein observed in operation on these cases recovery in 36%, improvement in 28% and death in 36%.

Results depend on the etiology and bacteriology. While Velpeau's mortality was 100%, and Dupuytren's was 92%, the mortality nowadays is but little over 1%.

4. *Putrid pleurisy* is treated like empyema.

5. *Hemorrhagic* effusions may call for gelatin injections subcutaneously; the amount aspirated should not exceed 500 c.c., and aspiration is repeated as seldom as possible.

After-treatment is directed toward prevention of thoracic retraction, to which end gymnastics and deep breathing are essential. A patient having suffered from a "primary" effusive pleurisy should be treated as one with latent tuberculosis.

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THE DIAGNOSIS OF APPENDICITIS IN CHILDREN.*

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Appendicitis in infancy and childhood is one which, apparently, in the literature at least, has not received its just attention. In reviewing the literature I find a very limited number of writers taking up this important subject in detail, most contenting themselves with the reports of a few cases.

The importance of this field to the pediatrician becomes apparent if we can rely upon the percentage statistics of its occurrence in some of the larger clinics:

Einhorn reports that children between 1 and 15 years of age represent only 2% of all of his hospital patients, from which Selter deducts that appendicitis is seven times as frequent among children as in adults.

Erdman reports of a total of 250 cases of appendicitis with 201 operations. Of these 29 were children under the 10th year, with 22 operations, resulting in 20 recoveries and 2 deaths. All were acute cases, 9 were operated on in the primary attack and 11 in the secondary or multiple attack; in 2 not stated. There were 14 cases of gangrene and perforation; 7 cases of foreign bodies, 4 cases of the latter contained from 6 to 30 pin worms each. As to age, 1 occurred at 3 years, 2 at 5, 3 at 6, 7 at 7, 4 at 9, and 5 at 10 years.

Matterstock reports 46 cases under 10 years of a total number of 474 cases, Fitz 22 out of 228 cases, Sonnenberg 14 out of 130, and Nothnagel 1 out of 130, but the latter believed this to be due to the fact that children are rarely received in his clinic. Griffith has collected 15 cases under 2 years of age, 2 of which, Pollard's and Gayen's, were six weeks of age. McCosh in his first 1,000 operative cases of appendicitis found 1.7% operated in the first 5 years, while 7.5% had shown symptoms, 6.8% operated in the first 10 years, while 17% had shown symptoms during the first 10 years. Clodo has described a fold of peritoneum extending from the appendix to the ovary, the appendiculo-ovarian ligament, which carries a blood-vessel to the appendix. This together with the fact that the appendix of the female is smaller than that of the male, may account for the comparatively small percentage of attacks among girls, according to most authors it is not more than one-half as frequent in male children and infants.

The high percentage of appendicitis in childhood is thought by Salhi to be due to

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the great amount of lymphoid tissue in the appendix at this early age and its tendency to rapid increase and secondary degeneration under prevailing influences, so common does he believe this to be that he definitely names it "Angina of the Vermiform Appendix." Klemm carries the analogy still further by suggesting this to be but a type of the inflammation to which all organs rich in lymphoid tissue are subject, examples of which are represented by lymph-adenitis, tonsilitis, osteo-myelitis, etc. As in case of the tonsils, an organ so infiltrated is readily affected by intercurrent traumatisms, circulatory disturbances and injuries by foreign bodies within the lumen leading to early infection, infiltration, ulceration and gangrene.

Speaking briefly of the bacteriology of appendicitis and perityphilitis, the greater number of investigations have shown that as a rule we are dealing with a mixed infection in which the most important organisms are the bacillus coli communis, the streptococcus pyogenes, the diplococcus pneumoniae and the anaerobes, while these forms are frequently found especially in the more virulent types, other forms of bacteria may assume the major role. I wish to note briefly a case of fulminating appendicitis in a 16-year-old boy, seen 60 hours after the first symptoms and operated upon two hours later, in which the distal half of the appendix was gangrenous and at least 12 ounces of fluid evacuated from the general peritoneal cavity, in which the predominating organism was streptococcus. The pus was mopped out with sponges, the cavity drained with cigarette drains and after an uneventful recovery, he left the hospital in 3½ weeks.

It is now generally recognized that the pathogenic powers of bacteria are not determined exclusively by their individual virulence, but, also, and possibly primarily, by the resisting powers of the organism and of the particular tissue invaded by the bacteria. It appears that in the vermiform appendix the various factors which intensify the pathogenic power of the invading bacteria are present; some of these factors have a tendency to increase the virulence of the bacteria, others to lower the resisting powers of the tissues, while in some instances both of these factors may be at work at the same time. While difficult to prove, it seems highly probable that the appendix with its numerous follicles, is a convenient point of entry for micro-organisms, and thus resembles the tonsils which are also rich in lymphatic tissue.

DIAGNOSIS.

We now come in contact with one of the most complex problems of modern surgery. First, we have before us an individual entity who in all probability has little or no power of interpreting the special symptoms of the complex group from which he may be a sufferer; second, because of his age he cannot be made to understand that it is of prime importance to aid the diagnostician rather than hinder him by crying, restlessness and a general rigidity which almost invariably predominates in the young.

Again the severe diffuse variety is commoner than the simple catarrhal or the latter may rapidly pass into the former and our first realization of the serious trouble at hand be the presence of a general or localized peritonitis.

Let us now recall the classical and less constant findings in our adult cases and briefly treat of them in the order of their seeming importance as applied to appendicitis in infancy and childhood, bearing in mind the differences to be expected in the catarrhal, gangrenous or the perforative stages, respectively.

1. *Spontaneous pain* manifested in the very young by fitful crying and sleep. In typical cases it is at first localized at "McBurney's point" but it soon becomes diffuse, radiating from the umbilicus into the pelvis. Young children complain of "belly ache" and usually lie curled up on one side. More rarely the pain may be referred to the right testicle or to the neck of the bladder because of the close relation with the right ureter, a point which should be carefully borne in mind while operating.

In rarer instances we may have perfora-

tion before we get a history of pain. (Spieler).

2. *Hyperaesthesia.* Tenderness on pressure is apt to be difficult to localize in the young and therefore of little value.

3. *Muscle spasm* or rigidity of the right rectus is present unusually early in children but is difficult to elicit and localize because of the child's fear of examination and its tendency toward rigidity of the abdominal muscles in general. Its elicitation is one of our most valuable diagnostic aids and is a fitting reward after a gentle and patient examination.

These three symptoms when associated with vomiting and constipation make a positive diagnosis possible in at least a majority of cases of older children, but in infancy and early childhood the diagnosis becomes far more difficult because of the tendencies of the child to evade examination and it becomes necessary to look for further aid.

4. Nausea and vomiting are usually present a short time after the onset of pain, it usually ceases as soon as the stomach is empty but reappears again in the later stages of the disease, when perforation has occurred, and abscess formed or an intestinal paresis exists.

5. Chill, rarely seen in the first stages.

6. *Pulse.* In simple cases the pulse usually corresponds with considerable regularity to the temperature, even more so in children than in adults, also as long as the process remains localized, when extensive peritonitis exists the pulse becomes rapid and weak, easily compressible and irregular in character.

7. *Temperature* is unreliable as the worst types may run their course without any great rise of temperature and we may easily have a distinct fall of temperature after perforation and beginning peritonitis. Rectal temperatures only are reliable.

8. *Constipation* is the rule in these cases. Diarrhoea may be present, and the latter cases as a group are less urgent than those associated with constipation whose early occurrence usually indicates intestinal paresis. The absence of blood, bloody mucus, etc., is important because of its predominance in intussusception.

9. *Tympanitis* with gradually increasing persistent abdominal distension is usually a later development.

10. *Flexion of the thigh,* which is usually well illustrated by attempts at extension and flexion of the two thighs.

11. *Unconscious tendency to place the hands in the region of the appendix* to prevent examination of the sensitive area, which unfortunately is not always located in the classical region, but is of frequent enough occurrence to be of diagnostic value.

12. *Rectal palpation.* In older children whose attention can be claimed this method of examination is of prime importance. In simple catarrhal cases I have several times been able to locate the point of greatest pain with accuracy and not infrequently the outline of the inflamed appendix can be palpated through the thin rectal wall in these small pelves. In later stages its value for locating localized abscesses or intra-peritoneal pressure are of inestimable value.

13. *Tumor per abdominal palpation,* if the illness is of several days' duration, associated with a septic temperature, rigor, leucocytosis, etc., should always lead to the consideration of appendicitis.

14. *Increased frequency of micturition* due probably to the close proximity of the right ureter and bladder to the area of inflammation.

15. *Leucocyte count.* As a rule in children it is not as valuable as in adults because of the great range, under normal conditions going to 20,000 or even higher. Probably the most reliable finding is a decided leucopenia, 5000-8000 in the presence of peritoneal involvement, which indicates either a low resistance or a preponderance of the infection over the natural resistance and is always a finding of ill omen. Probably more important than a simple increase will be a differential count when better understood. Gudobin estimates that in infancy polymorphonuclear cells average 34.6%, mononcular lymphocytes 59 and transitional forms 6.4%, while in later childhood the polymorphonuclears increase more nearly

to the normal. Remembering these characteristics a leucocyte count of 30,000 or more with 80% polymorphonuclear cells or 15,000 with 90% polymorphonuclear cells should always lead to the suspicion of the presence of pus. In intestinal obstruction the leucocytes may number even 50-80,000, which must not be forgotten. In all cases the accompanying findings must be considered.

16. *Iodophilia test,* which in the presence of pus has some claim to recognition. My own experience with it has not been entirely satisfactory. Although the laboratory findings are of considerable value in the diagnosis of atypical cases, and aid in the prognosis of the most virulent types, they should not, except in rare instances, be allowed to set the time of operation. Therefore, to be of value, we should: 1. Count the number of leucocytes. 2. Make a differential count, remembering the difference between the normal infants and adults count. 3. Stain blood film by special methods. Iodine reaction, etc.

17. *History of previous indefinite attacks of abdomnial pain* associated with a tendency to persist, and a slow retrogression of the group of indefinite symptoms is of vast importance and the history should always secure careful consideration.

DIFFERENTIAL DIAGNOSIS.

The surgeon is only too rarely called upon to treat a simple case of inflammation of the vermiform appendix in early childhood. And as the acute initial symptoms may be followed very quickly by the signs of a diffuse infective peritonitis, it becomes necessary for the diagnostician to be well acquainted with the disease in all its forms. The signs of perforation may become manifest after the first defecation, whether it be spontaneous or produced by an enema. It has been my unfortunate experience on several occasions to be called after many hours or days of delay spent in fruitless attempts to relieve the "belly ache," and on two occasions the time of perforation could be definitely ascertained by a history of sudden cessation of pain after a short sharp paroxysm.

Those conditions with which we are most likely to come in contact and will necessitate consideration for differentation are probably as follows:

1. Colic. It is distinguished by the absence of localized tenderness and fever, by its short duration and by the fact that the pain is generally less intense. Severe colic in older children should, however, always be regarded with suspicion.

2. Indigestion. From acute indigestion the diagnosis is often difficult at the onset and may be impossible for 24 hours. The pain is usually less severe but the temperature is higher. The pain is not usually localized, and if so, it is more apt to be in the epigastrium or umbilicus. But the same may be true of appendicitis and in the presence of pain, vomiting, localized tenderness, and severe constitutional symptoms, appendicitis is never to be lost sight of. With the former, diarrhoea is the more frequent, while in appendicitis the reverse is true.

3. Intussusception in infants without a palpable tumor requires a great deal of care in differentiation, otherwise an error may be made. With a proper examination and history in a typical case the diagnosis is not difficult. Pain, colic and vomiting are intense and severe from the time of onset. Bloody stools and tenesmus are almost constant. Temperature shows little or no elevation at the onset and in the presence of a typical tumor palpable through a more or less lax abdominal wall only moderately hyperaesthetic our diagnosis should be complete. This was well illustrated by a case which I operated upon this afternoon in which there existed a highly oedematus tumor, of 29 hours standing, involving over 30 inches of intestine and in which case the child seemed to suffer a minimum of pain upon deep abdominal palpation, allowing the same to be made without crying or resistance.

4. Acute intestinal obstruction. Its onset is more abrupt, pain of severer type, remissive in character, and referred frequently, though not always, to the seat of the obstruction. There are absolute constipation and suppression of flatus, with early and persist-

ent vomiting, soon becoming fecal, a condition rarely occurring except in the later stages of appendicitis. Shock and collapse appear earlier in obstruction than in appendicitis.

5. Psoitis, which is usually of traumatic origin and associated with a deformity due to retraction of the thigh, but is rarely accompanied by the typical findings of appendicitis and more frequently taken for a Pott's disease.

6. Pott's Disease. The absence of intestinal symptoms, curving of the lumbar spine when the limb is brought into a fully extended position, the characteristic deformity, inability to execute the normal movements of the joint, and pain referred to the knee are sufficient to characterize the disease of the hip-joint.

7. Renal colic is usually ushered in by a chill, and the excruciating pain is more perceptible posteriorly than anteriorly, and radiates along the course of the ureter into the ovary or testicle, and is diminished by the voiding of urine. There is usually absence of temperature, abdominal rigidity and localized pain in the right iliac frossa. Blood is frequently found in the urine.

8. Biliary colic. Fever is absent in uncomplicated cases, history frequently of previous attacks accompanied by jaundice, clay-colored stools, and higher location of seat of pain with frequently a radiation upward and posteriorly to the scapula are all points of differentiation.

9. Perityphilitic or perinephritic abscess. They may be secondary to appendicitis, the abscess taking this course rather than a peritionitis, and the pus may then track up the back for a considerable distance where it may be opened in the loin. In primary cases of the latter there is rarely disturbance of intestinal function.

10. Pneumonia and pleurisy. Both present a tendency on the part of the child to refer to the abdomen the pain really felt in the chest. Associated with this pain are, constipation and abdominal tenderness with distension, symptoms which commonly usher in an attack of pneumonia and early produce a clinical picture simulating appendicitis. Differentiation is usually possible by carefully noting the history of (1) a sudden rise of temperature to 103 F. or thereabouts and the tendency to maintain this degree with usually a preceding history of chill or convulsions; (2) the acceleration of respiration which is out of proportion to the pulse rate or the pyrexia; (3) the relaxation of the abdominal walls between respirations; (4) the disappearance or diminution of tenderness on deep pressure with the flat of the hand; (5) the possible presence of cough. No operation for appendicitis should be undertaken until after careful and repeated examination of the lungs have been made.

11. Tubercular peritonitis, must be considered in differentiating the more chronic forms. The clinical history, physical findings other than abdominal lesions and early ascites and progressive course make differentiation after prolonged observation in most cases possible.

12. Incipient inguinal hernia. It is usually not accompanied by a rise in temperature or abdominal rigidity. Examination of the hernial orifices should be made in all suspected cases of appendicitis.

13. Typhoid fever. A Widal reaction is of great assistance as are also the absence of the usual physical findings and low leucocyte count. The most difficult complication to differentiate is a perforating ulcer in an ambulatory typhoid case.

14. Infection of Meckel's Diverticúlúm. Very rare except early when still attached to the umbilicus, when the infection and distension shows itself in the scar of the cord. The same may be said of a patent urachus.

15. Torsion of the cord of an undescended testicle. A case of torsion of the cord of an undescended right-sided testicle, which the author recently saw in consultation, presented many of the findings of intestinal obstruction, but upon careful examination the true condition became apparent and was confirmed by operation.

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WATER SUPPLY.

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A supply of water for purposes of drinking, bathing, washing and industrial uses, demands first consideration whether one contemplates establishing a home, building a factory or founding a city.

The principal sources of supply may be briefly stated as: (1) Rain water; (2) surface water; (3) running streams; (4) underground water; (5) artesian wells; (6) lake water.

(1) Rain water is generally most nearly free from mineral and organic foreign substances, except particles contained in the air which are washed down. This water collected in barrels and cisterns furnishes much of that used for drinking and household purposes in many villages and in newly settled districts. Many farmers and others use cistern water from choice for drinking purposes. The water is soft and those who use it continuously like its flavor. The laundry-maid is most pleased when she has a supply of rain water. Where it can be secured free from dirt, soot and the accumulations of city life, it is very desirable as a pure drinking water; but E. F. Burch[1] reports cases of typhoid fever due to drinking water contained in a barrel.

(2). Surface water is rain water which remains on or near the surface-soil, without outlet or inlet. This often becomes stagnant. Ponds, swamps, sloughs are familiar illustrations. This water, in the case of swamps, bayous and similar bodies, is often the remains of running streams, but becoming stagnant assumes dangers not so characteristic of running water; and Leighton[2] says that such waters are dangerous to the neighborhood. Familiar dangers to be recalled here, are the breeding of mosquitoes, the vicious bite of which often conveys the causes of malaria, yellow fever and perhaps other diseases. It is unfortunate for the family or individual who must rely upon such water supply. In portions of the South, Cuba and some other regions, there is nothing better for some of the poorer classes. The wells—or ground cisterns—dug in the drift or alluvium of many regions, furnish merely surface water, which is better than that described above only because it has been filtered through the soil. If the filtering is through sand it may furnish fairly good water. Cases of typhoid fever in my own practice have frequently been traced to the drinking of water from such surface wells. Many of my confreres have assured me that they have had similar experience. The ground-water of the text-books is included here. Running streams may be included in "surface water," and only furnish better water for household purposes because the continual agitation or motion of water as in flowing streams and waves of bodies of water is one of Nature's ways of purification. Water in a constant state of movement, as

in a running stream, a river or large lake tends to become pure, in part at least, because different particles of it are constantly coming in contact with the atmosphere and undergoing fresh aeration. Motion, in water, as in all other entities of the universe, seems to be the law of perfect function. Motion, however, is not always a guaranty of purity, for cases of typhoid and other contagious diseases have been traced not infrequently to sources of infection several miles away, from which the toxic agent has been brought through the water of a running stream. Time, distance and the action of the sun's rays all aid in purifying running water.

(4). Under-ground a sub-surface water was formerly supposed to be ideal for household uses. Spring water is generally a favorite. Many prefer it to any other variety of water. By underground water I mean running water under the surface soil, which sooner or later finds an exit from the ground. Besides springs, underground streams should be included here. In the southern portion of the United States in regions near the Tennessee and Columbian ranges, and near other ranges in America, as in other mountainous countries, there are many beautiful illustrations of underground water, gushing in cold, sparkling streams from the ground or from under some rocky ledge. In these regions, villages and cities have felt themselves fortunate to secure such apparently pure supplies of water. This has been a favorite supply in France, and until recently no fear was felt regarding their drinking water. It should seem that the accumulation along the ridges and sources of these underground streams might long ago have aroused suspicion in the minds of those who used this water. The inevitable has happened. With the progress of science and the search for causes of disease, at first this kind of water supply was suspected and then experiments have led to a knowledge that these sources are often impregnated with disease germs, which have been the cause of epidemics of typhoid and other fevers in the community supplied by this water. The Paris authorities[3] became uneasy, partly because they suspected the purity of the water and partly because the supply needed replenishing, and in 1902 introduced filtered water from the Seine into certain portions of the city. The water of the Seine in its untreated state is not above suspicion and filters were introduced to clarify it for drinking purposes. The result was astonishing. There was an immediate diminution of typhoid fever in that portion of the city supplied with filtered Seine water, and in one district there was not a single death during the epidemic of February and March, 1904. Thus it may be seen that underground water is falling into disrepute as a pure drinking water, at least in France.

(5). Artesian wells, when properly constructed, that is, when the iron tubing extends down to the rock from which the water rises, furnish water almost or quite free from organic matter; and not only so but if the tube reaches the source of supply the water is often as soft as lake water. Green Bay, Wis., is supplied in this manner. I am informed by Dr. Beck of that city, and Dr. Slaughter of the same place says that analysis shows the water to be pure for drinking purposes. Waukegan was formerly supplied by water from artesian wells. During that time not a single case of typhoid fever occurred in families using the artesian water, nor in any other family was infection ever attributed to water from the artesian wells.

Artesian water, then, seems to be desirable where it can be secured in sufficient quantity and especially in interior villages and towns.

(6). Superficial bodies of water of considerable size—lakes. A large lake is in a constant state of motion. This agitation brings the surface layer more freely in contact with the atmosphere and sun's rays and in consequence a greater number of particles of water are oxygenated or aerated during a given period than could be the case in still water. Hence, such a body furnishes a relatively pure water. The proximity of cities which empty their sewage into lakes renders this water suspicious when the supply is obtained near the shore. If the intake is put

out beyond the limits of sewage contamination, a very palatable and satisfactory drinking water can be secured from large lakes.

The environment of the source of water supply should be carefully examined, as Wesbrook[4] suggests, in order that proper precautions may be taken to prevent epidemics from contaminations. A bacteriological examination shrould be made, for this is of more value[5] than a chemical examination, and W. G. Bissel[6] warns against the mistake of neglect in this particular. It should be borne in mind that it is better to seek a source of pure water than to try to purify a contaminated source[7]. Whatever the source, the authorities should have a bacteriological examination of the water made to enable them to control the supply[8] and furnish pure water. The importance of furnishing pure water has been further demonstrated by Hurtz and Burges[9] in their experiments upon vegetables. They found that if cabbage, radish, etc., be sprinkled with water containing bacilli of anthrax, typhoid or tuberculosis, the plants retain the germs unless exposed to the sun's rays. Furthermore, they find that if these germs be buried with the seeds from these vegetables, the germs come up with the new plants. This remarkable fact illustrates the possibility of epidemics springing from plants growing from seeds planted near or over bodies dead with some infectious disease.

PURIFYING WATER.

(A). Municipal. (a). Agitation when done by Nature as in running streams or the waves of the lake, goes far toward purifying water, but artificial agitation cannot be applied with great hope of success. (b) Settling wells have been used in many instances with considerable success, and with the addition of the copper treatment may become a favorite method of treating impure waters. (c) Filtration through sand has been found to give the most satisfactory results. When properly carried out this is of more value than mechanical filters in reducing impurities; sand filtrations reducing the impurities[10] in the ratio of 78.5% while the mechanical filters reduce them 26%.

Some astonishing and extremely interesting facts have been observed in relation to sand filtration. Reference has already been made to the experience of Parisian authorities, who secured purer water by filtering the water of the Seine than they were receiving from springs and mountain streams. We are informed[11] that other European cities have secured most satisfactory results from filtration. Berlin is supplied with water from lakes, this water is filtered and the death rate from typhoid fever has been reduced to 7½ per 100,000. The average of 28 cities in America was 50 per 100,000. Hamburg, which is supplied from the Elbe, by filtering the water, reduced the typhoid death rate from 28 to 7½ per 100,000. By filtration London has reduced its death rate from typhoid fever to 14½, and Rotterdam to 4 7-10 per hundred thousand. The principal cities of America show higher death rates because their waters are generally not filtered. The Hague water is secured from driven wells and is also filtered. The death rate from typhoid for six years averaged 5 per 100,000. Filtration of lake water through sand by means of wells has been tried with success by a number of cities. Superior, Wis., is one of these. I have received a letter from Dr. Renne, the commissioner of health of that city, in which he assures me that, whereas they had many cases of typhoid fever before installing the present filtering system, now the disease is practically banished from the city.

Probably at the present time no other method of water purification for the municipality is in such high repute as sand filtration; and wherever that method can be carried out no official should hesitate to select it and urge its adoption.

(d). There are localities, however, where filtration cannot be practiced in perfection because of financial or other conditions. In reservoirs, small lakes and settling wells certain forms of algae grow and render the water impure, giving it often a disagreeable odor. The same conditions may prevail in cisterns and barrels containing rain water. Agitations of these waters renders the odors worse because the little oil sacs in the algae are broken up and it is chiefly the oil which

gives the odor. To meet such difficulties and to try to discover some good method of rendering waters free from algae the laboratories of the government at Washington made experiments with various substances. According to Dr. Geo. T. Moore[12], the substance which gives most satisfactory results in these cases is copper. The preparation used is the sulphate. His experiments, which have extended over much time and have been conducted with rare skill, demonstrate that algae can be destroyed in a few hours by introducing the sulphate of copper into a reservoir or other water container. It is only necessary to use a quantity sufficient to make the water a solution of 1 part in 4,000,000 to destroy some of the most troublesome varieties. A most remarkable and valuable feature or discovery of the experiments was that the water thus treated is copper free in 24 to 48 hours, rendering it a wholesome and palatable drinking water. Even if the copper were not removed, the amount of the substance one might get should one drink a gallon of the water a day would be so small that not even a child or the most sensitive female could feel the slightest effect.

Since these investigations were made several cities have been induced to make trial of the method, and the results have been uniformly successful and eminently satisfactory. Of these may be mentioned Butte, Mont.; Boston, Mass.; Elmira and Cambridge, N. Y.; Baltimore, Md.; and Winchester, Ky. Such remarkable results attended this phase of the investigation that Dr. Moore undertook to determine the effect of the copper treatment of water upon pathogenic bacteria, especially the bacilli of typhoid, dysentery and cholera. The results here were as amazing as in his preceding experiments. Stronger solutions had to be used, however; still the effect of the copper upon these germs is so powerful that they cannot survive in a reservoir which contains one part of copper sulphate in 100,000 parts of water. The bacilli were totally destroyed by that quantity of the copper. It has been asserted that those laboring in copper works have gone through a cholera epidemic with entire freedom from the disease. (Chairman[13] State Board Health, Mass.) Dr. Moore further states that colloidal solutions of copper—that is, solutions of the metal, not a compound of it—also have a distinctive effect upon algae and bacteria; and suggests that the suspension of metallic copper sheets at the intake of the reservoir might serve a good purpose for purifying water. Whether a system of copper sheets can be arranged so as to come in contact with every particle of water entering the intake from the lake and thus accomplish something toward the purification of a city's water supply is a matter which will bear investigation. Indeed, the experience of others might justify a trial of such a system of metallic sheets, in a city with a lake too large to be dealt with as an ordinary reservoir. It would require, however, that the metallic sheets be kept clean and bright. It must be distinctly understood that this method cannot take the place of filtering and boiling. It is only supplementary.

Those who are interested in this subject and desire to make trial of the method are invited to consult the Bureau of Plant Industry at Washington for detailed instructions.

The writer has prescribed a compound of copper for typhoid and other intestinal infections during a period of several years, and with such gratifying success that he has lost but one case of typhoid fever. Indeed, that case should not be ascribed to a failure of the treatment, but to a perforation resulting from beginning manual labor nearly a month sooner than the time prescribed.

(B). Purifying water for domestic use.

Kupffer[14] has given a simple test for potable water which is easy of application. Make the following solution: 1 part (ʒj) tannin ; four parts (ʒiv) distilled water; 1 part (ʒj) spirits of wine. To a glassful of water to be tested add a teasponful of the clear (filtered) solution. If no turbidity occurs in five hours, the water is good; if the turbidity occurs in an hour the water must be classed as unsafe, if not dangerous; if the turbidity occurs in two hours the water is not to be recommended; and if it turns brownish in three hours it contains am-

monia, but is perhaps of average composition.

1. Filtering is a common and satisfactory method of purifying water when properly done. The small, cheap filters placed upon the market are, in many cases, worthless. From experiments often made with sand filtration one would be inclined to favor filters made of sandstone. The writer has used such a filter for several years. The water is always as clear as crystal, freed from odors, and several microscopic examinations have shown it to be bacteria free. More expensive filters can be had, some of which are very good. To meet the needs of the poor, however, something different must be suggested. Several forms of temporary arrangements for filtrations have been suggested. The writer has known the following to be used with quite satisfactory results: Take a large container, barrel, tub, keg, can or stone jar with an opening or faucet at the bottom; make it perfectly clean and cover the floor of the container with clean gauze; put upon this a layer of clean gravel 2¼ inches thick; cover this with a layer of charcoal of the same thickness; upon this put a layer of clean sand of a thickness equal to one-half the depth of the vessel or container. The water is to be poured upon the sand and allowed to filter through the layers. Water from the lake, pools, ponds, swamps or rivers will be rendered beautiful and palatable by such filtration and disease often may be averted. These filters need to be renewed from time to time, depending upon the size of the container. A very small filter prepared from these suggestions should be renewed daily. The excellent water thus secured is sufficient reward for the trouble and time required to prepare and renew the filter.

2. Where water cannot be filtered and where suspicion of impurities rests upon filtered water, it should be boiled. Boiling for half an hour will destroy most if not all pathogenic bacteria and is the safest method that can be employed by most people.

3. The most satisfactory method which assures a water absolutely germ free is distillation. The first cost of a still large enough for a family may not exceed that of a good filter. The great expense is in its use. Indeed that expense is not great as compared with other luxuries enjoyed by the average family. The family who can afford 3 to 10 cents a day for pure water should at once invest in a still.

4. Finally, if there is enough virtue in metallic copper to justify its recommendation to municipal authorities for purifying city water, surely it is to be recommended to the family. The use of copper kettles, pans, pails and cooking utensils should render the family largely free from dangers of germ infection due to water.

The use of the sulphate of copper in families is a problem for the profession to work out. If at the end of 24 hours the water shows traces of copper it may be precipitated by some hydroxide or carbonate.

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THE SURGICAL TREATMENT OF SCIATICA.

BY M. R. BARKER, M. S., M. D., CHICAGO.

In discussing the treatment of sciatica we are again confronted with a name conveying no idea of the etiology or pathology of the disease for which it stands. It has been proven that this complex condition known as sciatica may be established and maintained by the continued action of various causes. Among which we may mention traumatism, cold, infection, etc. It is also well known that the disease may exist and continue indefinitely with no ascertainable cause. In other words, it is not always secondary to some other condition. We do not

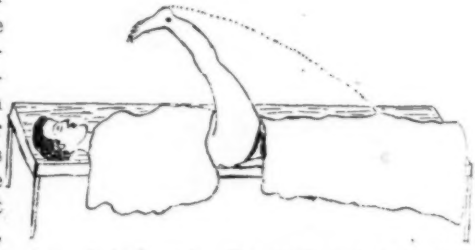
positively know the true pathology of sciatica, but reasoning from cause to effect we believe that the cause in any given case, whatever it may be, for instance, a tumor in the rectum or a retroverted uterus, impinging upon the nerve, first irritates causing a neuralgia, but by its continued action causes an inflammatory process of the nerve sheath with adhesions between the sheath and nerve substance and a thickening of the sheath with a narrowing of its calibre. Hence a binding of the nerve substance by its contracted sheath.

When this condition obtains the removal of the primary cause does not cure the disease. For instance, if the cause is a retroverted uterus, a ventro fixation of the uterus will not break up the adhesions between the nerve sheath and the nerve substance nor release the nerve substance from the grasp of its inflamed sheath. Neither can the disease be cured while the pernicious influence of the primary cause exists. Hence to successfully treat this condition we must search out the primary cause, if possible, and remove it and then apply such treatment to the nerve as will undo the mischief done. The object of this paper is to present a reasonable treatment for sciatica based upon the above etiology and pathology.

For clearness of description we will divide the treatment into two parts. First, the dry or bloodless stretching of the nerve. Second, the introduction of normal salt solution between the nerve sheath and the nerve substance. Paul Voct and Valentine long ago formulated some rules for a guide in nerve stretching. Among them were these: "A nerve is only elastic and stretchable within certain limits, that if those limits are exceeded rupture of the nerve or of some of its fibers results and disaster follows. That this limit does not much exceed the normal limit of motion of the part supplied by the nerve." They also proved that nerve stretching in a *moderate degree* lengthens the primary fasciculi and thus decreases their caliber, freeing them to some extent from any pressure that may be exerted upon them by their sheath, and that such stretching does not produce ill results.

The dry stretching of which we have spoken is done for the reason set forth by Voct, it lessens the caliber of the nerve substance and thus relieves the pressure upon it by a contracted sheath. It is performed as follows: The patient is placed upon his back on the operating table and anaesthetized. The diseased limb is grasped thus, the heel by the right hand of the operator, while the left hand is placed in front and above the knee. The limb is then placed in extreme extension, being thrown up over the body as seen in Fig. No. 1, a considerable

Fig. No. 1



force being used. The limb is held in this position a few seconds and then relaxed for a few seconds. This maneuver is repeated ten or twelve times, which completes the stretching and which has not exceeded the rule prescribed by Voct. The second part of the treatment consists in the injection of normal salt solution beneath the diseased nerve sheath. To do this the nerve is exposed by an incision between the trocanter major and the tuberosity of the ischium. All of the tissues are separated from the nerve as far as possible both longitudinally and laterally, but the nerve is not raised out of its bed and must not be on the stretch when the injection is made. The reason for this is apparent. As the salt solution is forced between the nerve sheath and nerve substance the two are separated and the adhesions between them broken up. The further they are separated within reason the more surely are the adhesions destroyed. A common aspirator with a barrel holding a half an ounce, having a needle about four inches long, is a satisfactory instrument with which to inject the salt solution. The

point of the needle is forced through the nerve sheath and run either up or down beneath the sheath about a half an inch when the contents of the syringe is forced in. When this is done the nerve sheath is seen to expand considerably. This process is repeated eight or ten times, changing the direction of the needle each time. This terminates the treatment. The wound is closed, the patient put to bed, massage is practiced every day for ten days, and the patient made to use the limb from the first.

Dr. A. H. Ferguson has used this treatment a number of times with perfect results. Some of his patients having been treated five years without a return of the disease. The only difference between his treatment and the one I have used and described is, Dr. Ferguson while the patient is still anaesthetized injects into the nerve the salt solution without exposing the nerve nor isolating it from the tissues about it. He introduces a long needle to the point where in his judgment he has entered the nerve and injects the fluid. To a less experienced surgeon this would be uncertain work. Dr. J. Lange reports in the Münchener Med. Woch. the successful use of normal salt solution with a little eucain—B injected into the nerve. He uses from 70 to 100 c.c. of the solution. He introduces a long needle without general anaesthesia, being apprised of entering the nerve by the pain it causes the patient. He does not stretch the nerve. He reports ten successes and one failure by this method.

To recapitulate:

1.

We believe that sciatica is at first a neuralgia but later becomes a neuritis, with adhesions between the nerve sheath and nerve substance and a contraction and thickening of the nerve sheath.

2.

That the primary cause must be removed if ascertainable and a treatment applied to the nerve which will relieve the nerve substance from the pressure of its contracted sheath and break up adhesions between the nerve sheath and the nerve substance.

3.

That the bloodless stretching of the nerve, and the injection of normal salt solution by the open method as herein described best meets the indications.

Dr. Lange, as we have stated has treated eleven cases with one failure. Dr. Ferguson reports four cases one of which has been treated for five years and none of them for less than two years and no recurrence in any of the cases. I have three cases to report all treated by the open method herein described and all treated within the last year. Of these three cases two were males and one female. They were all typical cases of sciatica. The males were both suffering with internal hemorrhoids and constipation. They had suffered from three to five years respectively. The female had a retroverted uterus which was bound to the posterior pelvic wall by adhesions. She had been suffering for one year, but for nine months of the time was bed ridden for the reason that she could neither sit nor stand by reason of the pain. The hemorrhoids were removed, and a ventrofixation done upon the uterus. These cases were fully relieved of suffering from the first and are now practically as well as they ever were. All the work on each patient was done at one sitting.

4625 Greenwood ave.

SOME OF THE NEWER REMEDIES.*

BY JOSEPH C. BECK, M. D., CHICAGO.

Gentlemen: My purpose in bring this subject before you this evening is two-fold:

1st. To report the results obtained from the use of some of these remedies.

2d. If possible, to obtain your opinion in a discussion as to the advisability of trying these remedies, of which there are such a vast number in the market, and constantly more of them being added.

This latter phase of my paper does not perhaps, belong to a discussion of a special society as ours, and I shall not, therefore, devote much time to it.

In looking up the literature on *Newer Remedies,* I was able to collect 11,064 such

*Read at meeting of Laryngological and Otological Society, March 7, 1905.

compounds as are recognized and used in the medical profession. It seems to me the important question to decide for ourselves is how or what to find out about these preparations as to their value.

Most frequently we are presented with a few samples by an agent or a salesman, who takes up our valuable time explaining the anatomy, physiology and diseases, and whatever his remedy, it is better than any other, and in exchange for a card will leave the samples on our desk, or else mail us literature or samples, and this is constantly making up the bulk of our mails, which, again, requires time to examine and read. Most frequently these are thrown into the waste-basket or put upon the shelf for the purpose of giving to some poor patient free of charge, without particularly making a record of what was given, and when said patient returns and reports either progress or no improvement, perhaps the condition worse, one does not know what was given. Should we, therefore, refuse to listen to these agents and try out any of these modern remedies but simply stick to the old pharmacopea and prescribe our often chemically incompatible or nauseating mixtures.

There certainly must be a happy medium, because there are many new compounds put upon the market that are a distinct advantage to our therapeutic measures, and I would not want to do without the use of them.

It seems to me therefore, that if there would be some controlling body of men, who would have to pass upon the real value of a drug or compound after it has been thoroughly and scientifically tried in clinics and hospitals and statistics published under their supervision in some journal, as for instance, in the Journal of the American Medical Association; statistics that are reliable, we would not have so many compounds of the same kind, only differing in name and appearance. There would be less chance for substituting, because the way matters are now, outside of a few of our drug stores in the center of the city, the druggists do not and cannot keep all the new remedies in stock and they either delay the filling of the prescription or use a substitute, conditions that cannot be very well controlled by us.

The new remedies that I have selected to speak to you about, I have tried out clinically, I mean in my private practice as well as dispensary and hospital, with a fair record of the same, and have tabulated them with the results obtained. But since the reading of that report would be too lengthy and not absolutely necessary, I will just name the essential points. First, name of the drug, second, conditions used in, and third, results obtained. Fourteen preparations of which eight are for local treatment and six internal.

Most of you are familiar with the majority of these preparations, and I hope you will, in the discussion bring out the results obtained by you in the use of similar drugs.

Case 1. *Anaesthesin.* Case of Miss S: Painful ulcer of the septum. A local application of 5% ointment two times daily relieved condition immediately.

Case 2. Mr. L: Painful ulceration of the tongue, (specific). The use of anaesthesin bonbons. Relief invariably so that patient could eat a meal in comfort, without that it was impossible.

Case 3. Master C: Earache. Hot drops of anaesthesin in oil, 5%, absolute relief.

Case 4. Mr. H: Acute pharyngitis, painful deglutition. Anaesthesin spray 5%, followed by relief.

Case 5. Mr. F: Hypersensitive rhinitis. The only remedy that would lessen a constant itching in his nose was a 5% spray of anaesthesin in oil.

Case 6. Mr. D: Eczema, with intense itching of the external auditory canal. 10% ointment of the anaesthesin relieved the itching.

I have treated a number of other conditions where pain or hypersensitiveness was the principal symptom and was rarely disappointed in the action of this drug.

ARGYROL.

For more than a year I have used from five to twenty-five per cent argyrol solution as a routine treatment in nasal pharyngeal affections, but finally gave it up because I could see no appreciable effect that the rem-

edy had on the condition, and now resort to the old reliable nitrate of silver solutions.

I have found it of some value in chronic suppurative ears, and it seems to me that it action is limited more to the eye, than the ear, nose and throat.

ADRENALIN.

It seems unnecessary to speak about the merits of this drug, because it has been so universally used and accepted as giving absolutely good results. But I only wish to make a few points about it, which may be of interest. Much has been said against the use of it owing to the secondary bleeding in operations, and I want to say that I have had my share of that trouble, still, I would not do without the use of it.

I refer to the peculiar action that this drug has had on two of my cases, viz: producing shock. In both of these cases there was no cocaine used, but symptoms very much like it appeared.

I find that Toeplitz of New York has similar experiences from the use of Adrenalin and explains it as due to the ischemia of the nasal mucous membrane, an extension into the inner cranial cavity, causing there marked ischemia of the meninges and, eventually the brain. This is, of course, theoretical, but the only explanation that I am able to find in literature. Futterhoff has also had such experiences and says it is due to reflex-action on the nasal nerve.

As to adrenalin itself, I prefer it to any preparation of this suprarenal extract, having tried the adrenalin, adrin, adnephrin and epinephrin.

ASPIRIN.

In all cases of grippe like effects, associated principally with ear, nose and throat diseases, I have found this remedy par-excellence. In doses of five and ten grains, I have obtained immediate relief. In several cases of acute frontal sinusitis, with marked pain, it acted admirably, though in somewhat larger doses, say five to ten grains three times per day.

BROMOTONE.

The bromides are used by all of us considerably in our ear cases where tinnitus aurium is such an annoying symptom, and these salts are not alone very unpleasant to take but will disturb the stomach and produce bromism. My substitute for the salts of potash soda or potash is bromotone. In doses of 15 grains three times per day, and I have found it to be of absolute satisfaction. I do not mean to imply by that that the tinnitus was cured, or perhaps greater improvement followed, but simply that the unpleasant symptoms due to the ordinary salts were eliminated, and the patient preferred to take the bromotone.

CAMPHOR OXOL.

After more than two years experience with this remedy in chronic sup. ear diseases, I will say, unhesitatingly, that it is the best cleanser and deodorizer I have found. It is a remedy that can be given into the hands of the patient with safety and for home use. It has decided advantages to the ordinary syringing of the ears by eventually infected syringes and solutions. The alcohol contained in the preparation causes the patient considerable pain and burning, but this is only momentarily, and the patient soon gets accustomed to it. It may be diluted for children from ten to twenty-five per cent of the solution. After the use of this drug for a few weeks, I often substitute a dry gauze treatment.

IODONUCLEOIDS.

Since this is a home product, and the use of it is an every day occurrence, I have been able to come to some conclusions as to the value of this iodide preparation in comparison to the iodide of soda or potash, salts or iodipin. When this preparation was first put upon the market I was told that it was superior to the other iodide preparations in that the same results could be obtained in very much smaller doses without the producing of iodism, or the disturbances of the stomach or acne, etc. I immediately selected three cases in which I reported at the Chicago Medical Society the first report of this preparation by Dr. Baum. I then found it wanting, as I also found it later while I was using the small doses, and when I went back to the use of iodipin, I was very much relieved at the immediate change of the condition to the patient. It soon followed that the small dose of iodonucleoids had to be in-

creased the same as one does with the other iodides and when I did so the change became apparent, that is, better results were obtained. I, therefore, wish to state that I increase the dose of iodonucleoids the same as I would the K. I. and Na. I. in any case of Lues, and I obtain results equally as good as when I use the old, reliable remedies, without any gastric disturbances or other symptoms of iodism, which is a distinct advantage.

I had some patients who could not stand iodonucleoids but such patients usually could not stand the other iodide by stomach, and in those cases I used iodipin (Mercks) subcutaneously injected. It certainly requires some courage in cases of a gumma where active ulcerative processes are a distinct history to try a new remedy when one knows what an old reliable remedy will do. But how can we ever find out unless we try them and report our honest results of a well observed case. The use of a remedy that has distinct advantages to an older, is my plea, or an excuse for using iodonucleoids. I have had cases where larger doses of iodonucleoids would show no particular result, and when I switched to the other remedy could see immediate improvement. But this condition did not occur very often.

Iodonucleoids are used principally in Lues but also used in chronic catarrh states where I wish to use some alternative or cause hastening absorption as f. i. O. M. C. C.

In fact, using our old German proverb:

"If you know not the reason why,
Use K. I."

IODOVASOGEN.

In atrophic rhinitis, or any dry form of rhinitis, where massage is indicated as a routine local treatment the use of this oily substance thoroughly rubbed over the surfaces, seems to be followed by considerable relief, without influencing very much the pathological condition, as the regeneration of the structures.

UCAIN LACTATE.

It is, perhaps, too early to report on the use of this drug, having used it only in a small number of cases, but an adverse report of a remedy that is so highly recommended by the European men, may find room for discussion, since Dr. Pearce has told us that he has used it.

In the few cases that I tried the 15 per cent solution applied to the nasal mucuous membrance for operative procedures, I have found it wanting in every case. I was compelled to reanaesthetize with cocaine before I could proceed with the operation.

POLLANTIN.

Our latest discovery is a positive cure for hay fever. It is the antitoxine against this malady, and you are all familiar with it from personal observation as well as literature. I, therefore, need not go into a detailed description of the same.

Last year Dr. O. G. Stein presented to us a report of this substance, which was very encouraging. I have treated twelve cases the past season and report same in detail, but I want to state now that when the season was over I was very much disappointed as to the results. Only one case was completely relieved, and his occupation, perhaps, explains the reason why. As Dr. Dunbar told us on a recent visit to this city that the antitoxine that was put on the market would act as a specific in those cases where hay fever was due to the pollen of rye, which is frequently the cause of hay fever in Germany and in this country, the hay fever is due to ragweed or golden rod. The patient I speak of having been cured, is a buyer of wheat and rye and examines a great deal of grain.

Almost all the hay fever cases stated that they did not have their hay fever as hard as usual, and universally declared that their eye symptoms were much lighter.

If you have read the reports from Minneapolis of Dr. Dunbar's experiments in his native city, you will have hopes that after he produces the antitoxin to fit this part of the country, where hay fever is principally due to rag weed and golden rod, you will have a valuable remedy.

THIOSINAMIN.

Two years ago I read a paper before the Academy of Ophthalmology and Laryngology on the use of this drug in chronic O. M. C., with a clinical report on fourteen cases, and today I wish to supplement that

report by two-hundred more cases with this conclusive observation that the drug acts in almost every case producing positive general symptoms, as great fatigue, often nausea and loss of appetite.

2d. That the results as to the immediate improvement of hearing and tinnitus are all slight.

3d. That changes may occur in the scar tissue or connective tissue acting as a protective rather than a pathological, and grave lesions may occur.

I mention this drug because I know that a good many men are using it indiscriminately, especially general practitioners, and three cases came to my notice with these disastrous results.

1st case: The doctor prescribed thiosinamin to a patient complaining of a terrible ringing in her ears. The patient had a compensated left heart following rheumatism. When after taking a few doses of thiosinamin sudden dilatation followed, which required about six weeks before recompensation occurred. About two months later the patient again took some thiosinamin for her ears and the same symptoms occurred with a much slower process of compensation of the heart.

2d case: A man complaining of deafness and ringing was given thiosinamin, three grains three times per day. Six months previous this man had an operation on his bladder for the removal of stone. Following the use of thiosinamin the wound reopened and a fistula persisted for a long time.

3d case: A young woman had a perforation of the eye and the iris healed into the wound. The eye was perfectly quiet for a number of years. In the other eye she had a scar in the corner, for which thiosinamin was given to clear it up. While the scar in the cornea showed improvement in clearing, the eye having a perforation, with the iris healed in, reopened, infection set in with following panophthalmitis, which required the enucleation of the eye.

The last two cases occurred in my practice. Several other cases were reported to me by gentlemen of similar conditions occuring, as, for instance, in an old tuburcular individual, and this started up following the administration of thiosinamin.

FERROTROPON.

Whenever I am called upon to prescribe an iron product in arsenic cases associated with some ear, nose and throat effection, I usually do so by giving this pleasant iron preparation, which is easy to take and shows very early results; causing none of the disagreeable symptoms of the teeth. However, it does cause constipation at times, owing to the chocolate it is mixed with.

VIOFORM.

A dusting powder where one is needed, preferable to the borax so commonly used for this purpose.

VERONAL.

A most satisfactory and positive hypnotic without seriously effecting the digestion in the least, effecting no bad after effects have I observed following the use of it.

A dose is from ten to twenty grains at bed time.

92 State street.

HIGH FORCEPS, PELVIC INLET FORCEPS, ITS INDICATIONS AND RELATIONS TO FORCEPS AND VERSION.

BY GEORGE SCHMAUCH, M. D., 100 STATE ST., CHICAGO.

Obstetrical art is without doubt one of the most conservative branches of medicine. Semmelweiss's discovery of the general causes of puerperal fever and later on applied bacteriology have exerted a most benign influence on the management of labor. The indications for each operative act became stricter, the operative procedures have changed but little. Asepsis during the last 10 years has become common property and this has increased the desire of operative interference with the physician as well as with the patient. Since then operative obstetrics has assumed a more surgical aspect.

Quite a number of years passed, before it became thoroughly understood, that a clinically prepared Caesarean section is a compar-

atively safe operation. Today this operation is relatively frequent. The young surgeon threatens not only eclampsia, but also placenta previa with Caesarean section. The objective observer is surprised by the strange results. Eclamptic women, operated by the general surgeon, nearly all recover, while the obstetrician, with selection of proper cases from a large number, is not able to save his patient. However, these surgical excesses are quite natural. For every momentarily successful operation, performed in the interest of woman and child, will always be appreciated by the patient and friends. The only objection lies in the fact that the obstetrician works for the gynecologist. The patient is proud of having recovered from the serious operation, whose bad effects show but years afterwards. It is this momentary success, which often induces the practitioner to operate too early. Our proficiency in asepsis permits us to interfere instrumentally under certain conditions only to facilitate labor.

We all agree that the forceps is an exceedingly beneficial instrument in the hands of an experienced man, but becomes at once pernicious when handled with carelessness or ignorance. Most of our textbooks do not emphasize sufficiently that the forceps is a traction—instrument devised only for the head standing on the pelvic floor.

For the beginner the conditions for application of forceps cannot be often enough repeated. They are:

1. Complete dilation of the os.

2. The membranes must be ruptured.

3. The head must have descended to the pelvic floor, or at least be situated in the pelvis.

4. Size and solidity of the foetal head must in some degree harmonize with the cephalic curve of the forceps. Hydrocephalus as well as the head of a macerated or immature foetus are not fit for the forceps.

These conditions shall be present, when forceps is applied; only exceptionally the physician may depart from them.

Concerning the indications of forceps we have to distinguish the obstetric indication, formulated by the teacher of obstetrics, by the school, from those which general practice has taught. School medicine demands low forceps only in case of danger for mother or child. To this scientific indication practice has added another one which justly has been incorporated into the general obstetric discipline. This is delayed progress of labor during stage of expulsion, in other words, retardation of the expulsion of the head.

The idea that low forceps is an operation without danger gave rise to the doctrine, that forceps is indicated, when under the above named conditions the presenting head remains stationary for a period of two hours. This rule certainly precludes the existence of an exceptional rigidity of the external genitalia as cause of the delay. In case of an exceedingly rigid vulva an episiotomy will give relief. If abnormal sensitiveness prevents the woman from aiding the otherwise powerful uterine contractions by abnormal pressure, morphine or chloral will help more than forceps. Application of forceps never will prevent laceration of the perineum. The blades adapted to the head, augment its circumference and endanger the perineum by their sharp edges.

The primary function of the forceps is traction, it is very seldom used as a rotator. In a good forceps for common use the tips of the blades should be separated by a distance of 2 cm. We release and unlock the blades to allow the head to rotate in the forceps. Rotation by means of leverage can in reality be secured in deep transverse arrest only, where the head descends to the pelvic floor in the transverse diameter. Rotation should never be forced especially in occipito-posterior positions. Here rotation will only be successful if the head is higher up in the pelvis and not yet moulded.

The second indication for the use of forceps is very lax. It varies very much with the individual obstetrician and according to country. This indication is often used to save the doctors time rather than to spare the mother pain. Strict observance of the above mentioned conditions however will prevent serious harm to mother. Low forceps operation per se is an operation, which can be exe-

cuted, without endangering the life of mother or child.

According to the more or less extended indication frequency of forceps varies in Europe between 1, 4 and 11, 6 per cent and more. Osiander, a teacher of obstetrics in the thirties of the last century, at the University of Tubingen, Germany, reported 2,540 deliveries with 1,016 forceps, i. e. nearly 40 per cent. Spiegelberg from the clinic in Breslau reports 4,864 deliveries with 2 per cent forceps, part of which were performed for teaching purpose, hence without strict indication. Ahlfeld found it necessary to apply forceps in 2.75 per cent of 4,000 deliveries. Winkel in 3.08 per cent of 20,604 cases. As to private practice—Bockelmann, a well known obstetrician in Berlin, reported 3 years ago in the Berlin Gynecological society 335 cases of forceps in 15 years practice. Compared with Ahlfeld's statistic this would be equal to 12,400 deliveries. Merkel, Nurnberg, reports 21 per cent forceps, 940 deliveries in 10 years with 200 forceps. From this little report it is evident, that external causes compel the physician in practice to deviate from scientific indications.

v. Winkel, Munich, recently took occasion to declare the forceps, in accordance with Munchmeyer and Wahl, "the most bloody obstetrical operation." He designates forceps as an indispensable but hardly harmless instrument. v. W. refutes our second indication. He as well as some other German obstetricians recognize only the endangered life of mother or child as indication for forceps. Naturally his clinic as well as the others observing this rule, have a larger mortality of the children by forceps. v. W. has a mortality of 15.5 per cent, Dresden one of 17 per cent, whereas other hospitals, which recognize our second indication, have a far lower rate, namely: 4.7, 4.0 per cent. There is no considerable difference in the mortality of the mother. v. W. is in a way, right, when he says that his big mortality rate is but apparent. The obstretrician, who delivers every tenth parturient by forceps will certainly have a lower mortality of the children than the one who applies forceps only 3-5 times in 100 cases. v. W. wants the obstetrician to listen to the heart sounds every 10-15 minutes. Notwithstanding such an exact control of the foetal circulation v. W. has a mortality of 15.5 per cent. The condition of the child furnished the indication in 2-3 of all his cases of forceps. In consideration of this point and the better results at other clinics, one cannot help thinking that some of these children might have been saved by timely interference with forceps. It is hard to prove such an assertion by statistics. In comparing the absolute number of dead children after forceps-delivery with the total number of confinements, it will be seen that v. W. has lost 2 1-2 times as many children as Bonn and 33 per cent more than Basel. How much the results in practice and hospital differ will become evident from a comparison of Bockelmann's (Berlin) and Munchmeyer's (Dresden) statistic. B. had in 61 cases of old primiparae (over 30 years old) two dead children i. e., 3.3 per cent, whereas Munchmeyer had a mortality of 36.3 per cent in old primiparae. As statistics are influenced by so many factors, a comparison of a small number of 5,000 confinements with that of a four times larger one, as 20,000 (v. Winkel) is not very just. Personal experience and judgment are of more weight in these matters.

However no one will deny, that a child with normal heart-sounds, not impaired by prolonged labor, has more chances to live through an instrumental delivery than the one with the weak circulation. The difficulty lies in our inability to determine how much time elapses between the controllable changes in the foetal heart-sounds and the starting of premature respiration. There is doubtless an individual difference in the vitality of the various children; the encircling of the neck of the child by the umbilical cord is another factor which we are not able to estimate.

When other hospitals with a three times larger frequency of forceps-operation do not show a correspondingly lessened mortality, this is by no means a counter proof against the broader indication. Even if only a very small percentage of children is saved thereby,

without serious harm to the mother, we have gained considerably. How far an exceedingly delayed period of expulsion may harm the resisting powers of the maternal body is not within the limit of this paper. It is not necessary to be a fanatic adherent of Pinard's words: "That the child has a sacred right to live and none, neither father nor mother, nor the physician or anyone else can deprive it of these rights." At least one has to admit, that the child's rights have to be placed at equal consideration with the mother's demand for a healthy body after delivery. A careful physician will always consider both factors. Those, who regard the delayed expulsion as an indication, do not anxiously cling to the period of 2-3 hours. They wait 4 and 6 hours, when the deficiency of the powers of labor become apparent. Olshausen is perfectly right in saying "that the physician is not only duty bound, but also expected to shorten an exhausting and painful labor."

It is vastly different when the above named four conditions for application of forceps, are not present The simple and relatively safe forceps-operation becomes a serious undertaking, when forceps is applied to the head above the pelvic floor or when the head is presented in another than occipito-anterior position. It cannot be sufficiently emphasized, that under these conditions the practitioner is not justified in using the forceps, unless direct indication, danger for mother or child calls for it. The more serious the operation is the more urgent must be the indication. Incomplete dilatation of the os can be remedied by 4-6 slight incisions with the large curved Siebold scissors. Deep incisions, as recommended by Duehrssen lead to permanent injuries and should not be employed except in case of real danger. Many a physician returning from a confinement and criticising his own work, has come to the conclusion that he would have not applied forceps, had he known before how difficult it was. He naturally was quite certain about the indication in his case, but was deceived by the geographic position of the head in the pelvis. He undertook what was to be in his opinion a low forceps operation and in reality the head had hardly entered the mid plane of the pelvis. The determination of the situation of the head offers the greatest difficulty in the entire realm of obstetrics and only a large experience gives correct judgment in this regard. Despite this fact the most of our obstetrical textbooks are brief on this point and give only few references, which may guide in practice.

In vertex presentations the head is supposed to be situated on the pelvic floor, when on examination one can introduce one or two fingers with difficulty between the head and the pelvic floor. Palpitation through the abdominal walls reveals the curvature of the foetal neck under or in the level of the superior pelvic strait. However there are some exceptions resulting from the varying height of the pelvic canal and the size of the head.

It is no true sign that the head stands on the pelvic floor. Palpation through the abing the pains in the vulva, opened by the fingers, or when the examining finger comes directly in contact with it. A large caput succedaneum might easily prove the same finding, while the head is lodged in the middle part of the pelvis or still higher. The head is situated in the so-called narrow pelvic plane, when there is sufficient space between head and pelvic floor to enable one to reach the il spinae. The more of the interior of the pelvis allows of palpation, the higher is the head, provided it is of normal size. Occasionally examination under anaesthesia only will reveal the exact situation of the head. False pride is in such a case out of place. A second anaesthetic followed by an easy forceps will not do as much harm to the parturient, as a thoughtless difficult operation.

According to the station of the head a distinction is made between low, median and high forceps. A uniformity of the definition of the latter one has so far not been reached by the different nations. The term "high" naturally is only a relative one. Doorland gives in his textbooks a definition of "high forceps" as an operation on the head at or above the pelvic inlet. Some Germans reserve this name for that condition in which

the largest circumferance of the head has not yet passed the pelvic inlet. Williams gives the same definition. In addition to this he speaks of forceps on the floating head. Others think it justifiable to apply high forceps in those cases only in which the head merely has passed the inlet with its largest circumference. In contrast to the typical pelvic outlet forceps all these operations have lately been named atypical forceps. Every obstetrician will concede that the technique of forceps applied to the head stationed in the inlet is very different from the one after the head has passed the pelvic girdle. This operation should therefore be defined in a manner which leaves no doubt of its meaning. We would do very well in accepting the name of pelvic inlet forceps, the "forceps au detroit superieur," Beckeneingangszange, for this operation in contrast to the pelvic outlet forceps. Forceps applied to the head situated between these two extremes, medium or mid-forceps, could then be called pelvic forceps, Beckenzange. High forceps on the freely movable head is in my opinion an error.

The question is, if a special instrument, namely the axis-traction forceps, is required for the pelvic inlet forceps. The first models of forceps as well as the Niemeyer-Hohl forceps, whose blades are solid, were designed for the head resting on the pelvic floor. The higher situated the head, the larger must be the distance between blades and lock, otherwise the operator will not be able to perform the extraction of the head. The demand for a special instrument for the high standing head may be traced back as far as to Oslander. The oldest models of axis-traction forceps as Hermann's Hubert's second model, or Poullet's were devised for the purpose of pulling the head through the pelvic inlet. We notice a general desire to have the tractive force attack the head at its greatest circumference. This is easily and we may say sufficiently accomplished by attachment of tractionrods to the fenestra of the common long forceps. Axis-traction forceps constructed for this purpose is best defined as "pelvic inlet forceps" and ought to be differentiated from the proper axis-traction forceps. The latter are more complicated instruments and were devised to pull the head in the direction of the axis of the pelvis not only through the inlet but also through the whole pelvic canal. It need not be discussed again if it is possible at all that the center of the irregularly shaped head coincides at any time during labor with that of the *caruscurve*. The objection raised by Kliehn that the advocates of axis-traction forceps intend to improve on nature by their instruments is not without foundation. In reality we are not able to determine exactly the curved course of the pelvic axis. There is one shortcoming in axis-traction forceps and this undoubtedly exists in all proper models in that the foetal head is grasped so firmly by their compression-apparatus, that it loses its own mobility. Thus the directing influence of the walls of the pelvis and genital canal is entirely obliterated.

According to the doctrine of the Schroeder-Olshausen school the forceps should be adapted firmly to the head but at the same time forceps should permit the head to descend in such a way that its largest diameter coincides with the correspondingly largest plane of the pelvis. This natural procedure may occasionally be assisted by readjustment of the forceps.

The principal advantage of axis-traction forceps is to be found in the direction of the tractive force, which is exerted directly on the head. Therefore the amount of force lost in the extraction of the head is reduced to a minimum and consequently a better graduation of the tractive force can be obtained. The truth of the statement of some obstetricians, that a common long forceps is sufficient to deliver the head stationed in the pelvic inlet may be conceded in many cases. Indeed, often but little force is required to press the head into the pelvis, as demonstrated by the Hofmeier-Fritsch method of manual impression of the head. However the use of axis-traction forceps enables us to gage the degree of traction. In axis-traction the pressure of the head passing the inlet becomes distributed to the entire pelvic ring and is not exerted on the symphysis only, as in common forceps.

In a low pelvic canal a common long forceps might suffice especially if the lock of the forceps is grasped from below with the purpose of exerting a firmer traction downward. Not so in a case of considerable depth of the pelvis, when the lock disappears in the vulva and even the skilled obstetrician misjudges the degree of force to be employed. A rupture of the symphsis, which happened to myself in a case of normal pelvis and oversized child has taught me a lesson for life and since then I prefer the axis-traction forceps. Rudaux, who gives a review of 98 cases of rupture of the symphysis, comes to the conclusion that this accident has become very rare since the introduction of axis-traction forceps. Another advantage lies in the smaller degree of compression of the child's head than that produced by the common forceps. For only a small part of the tractive force acts laterally, the main portion has a downward direction, (cf Budin.) I do not demand any more of an axis-traction forceps than to enable one to pull the head through the pelvic inlet in the direction of the axis. The further directing of the head is better and easier accomplished by a good common forceps. All models respond to this demand more or less. A. R. Simpson's axis-traction forceps I know by personal experience and it has always satisfied me. In later days I used a modification, devised by Zangemeister in Olshausen's clinic, proposed before him by Matthaei and many others. The details of this instrument are described in the Cent f. Gynekol, 1899, page 925. It consists of two rectangular shaped steel traction rods to be hooked into the blades of the forceps, a handle and a fixation screw. This is a very simple and handy instrument, as it can be attached to the common forceps and easily might be placed in every kind of obstetrical bag. I have employed it many times and it has replaced axis-traction forceps in the most satisfactory way.

Despite the advantages of axis-traction forceps, used as pelvic inlet forceps, most of the German obstetricians still disapprove of this instrument. Menge only two years ago, called it in the Leipzig Gynecological society a murderous instrument. Ahlfeld, Spiegelberg, Olshausen call it useless in their textbooks. In their opinion the profit gained by high forceps operations is so far extremely small compared with the harm done by some practitioners.

It is not my intention to encourage the practitioner to perform pelvic inlet forceps operations. In my opinion this operation should be reserved for the specialist. He alone is able to properly determine the indication.

The conditions which have to be observed for a successful application of pelvic inlet forceps are in the first two points the same as in low forceps. We will have to employ radiating incisions of the os quite frequently, as the high standing head rarely dilates the os perfectly. The other two conditions are thus:

3. The disproportion between head and pelvic inlet must not be too great.

4. The head shall be partially fixed in the pelvic inlet. Its size shall be adapted to the size of the superior strait, in other words the head shall not float over the pelvic inlet but shall be moulded to a certain degree.

Contraindications of the pelvic inlet forceps are:

1. Generally equally contracted pelvis. In the more advanced degree of this type, the passing of the pelvic inlet, does not remove the difficulties of delivery, resulting from the diminution of all the other pelvic diameters. If only the pelvic inlet is contracted, high forceps certainly can be used successfully.

2. Pathologic presentations of the head in the pelvic inlet, as face and brow presentations, if manual correction cannot be accomplished, do as a rule with very few exceptions contraindicate high forceps.

The impression of the head into the pelvis, as recommended by Hofmeier-Fritsch, stands in direct competition with pelvic inlet forceps operation. Great force can be exerted in this way. If not performed in a very brisk manner, the danger of injury to the cervix is not considered high, although there are some cases reported. Some difficulty may be found in directing the pressure perpendicularly to the plane of the superior strait of the pelvis. However it is advisable to try external impression of the head in every case, before ap-

plying the forceps. Any considerable stretching in the lower uterine segment is a positive contraindication to this maneuver. If it succeeds in bringing the head into the pelvis, common forceps may finish the delivery. Failure does not imply that the head cannot be drawn through the pelvic brim by axis-traction forceps. Pressure from above and traction from below have a different effect. The compression of the foetal head in the elastic blades of the forceps is much less than the one caused by the palms of the hand.

I have endeavored to give some points regarding the determination of the situation of the head in the pelvis. It is much more difficult to determine if the head is standing with its largest circumference in the pelvic inlet, if it will pass or has passed it. The mobility of the head depends upon the relation of its size to that of the pelvic brim. A small head and a large pelvis on a large head and contracted pelvis may have the same effect, namely, the head remaining movable. The former occurs only in uterine inertia. Generally speaking, we might say, the head has not passed the brim of the pelvis with its largest circumference, as long as it stays movable. The very minute this event is accomplished, the mobility upwards ceases. The movable head is easily lifted from the pelvic brim, by grasping it between the two fingers in the vagina and the other hand upon the abdomen. Liquor Amnii will then escape. It is understood that care must be taken to prevent the washing down of the umbilical cord. When the extended finger is able to reach the promontory, the head is still movable in the pelvic inlet and has entered it only with a smaller segment. Every centimeter of descent renders a corresponding part of the sacrum inaccessible to the examining finger. If it is possible to reach the promontory with the bent finger only, then the head is usually fixed in the pelvic inlet. If the head and its caput succedaneum covers the anterior surface of the first sacral vertebra, the greater segment of the head has generally passed the narrow point of the inlet.

However, these findings cannot in all cases be absolutely relied on. The nature of the promontory, if more or less projecting, as well as the size of the caput succedaneum influence the covering of the first sacral vertebra by the head in a certain degree. The situation of the head in the axis of the pelvis, if high or low, does by no means indicate whether or not the head has passed the inlet. Hence the advice to have the finger sweep from the inner surface of the symphysis around the head to the promontory and in this way estimate the segment of the head which has entered the pelvis.

In multiparas with relaxed abdominal walls one may easily compare the engaged part of the head with the one standing above the pelvic brim. The most of the pelves in which high forceps operation is to be considered are flat. In all more advanced degrees of this variety of contracted pelvis the head presents itself to the examining finger in the so termed parieto-anterior presentation, the large fontanelle being the lowest point of the head, the point of direction. The following landmarks will facilitate matters in such cases, namely: 1. The distance of the temporal suture and the parietal eminences from the anterior pelvic girdle. 2. Comparison of the distance between sagittal suture and promontory during different phases of labor. This may well enable one to estimate accurately, whether there is progress in labor, whether the largest circumference of the head has entered the inlet or not. The practitioner in determining the descent of the head in antero-parietal presentations is the best guided by the small fontanelle. His first examination in a flat pelvis reveals the sinciput low, the large fontanelle easy to palpate, whereas the occiput stands high and the small fontanelle can hardly be felt or not at all. If second examination allows palpation of the small fontanelle, we might say with great certainty that the head has or soon will overcome the resistance of the pelvic inlet.

Another point to be determined in the examination of the high standing head, is its size. Palpation of the fontanelles, estimating their size and distance from each other, aid us in gauging the size of the head. Ahlfeld has given the advice to measure the size of

the head directly with the pelvimeter, but the results are not very reliable. However the size of the head is not the only deciding factor, whether or not the head will pass the inlet. The consistency of the bones, the width of the sutures and the compressibility of the head are of great importance also. In every case due attention must be paid to the history of previous labors.

In a multipara, who has born 1 or 2 children spotaneously, or whose children have passed the pelvic inlet at least without instrumental assistance, we might expect the same in the present labor. If version has been performed, we are not yet permitted to assume, that high forceps will be successful. To determine the above mentioned points examination must be made with four fingers and in difficult cases under anaesthesia. The proper perception and accurate estimation of all these factors shows the skilled obstetrician. The same rule applies to common and high forceps, namely: Whenever instruments have been introduced into the uterine cavity, a speedy termination of labor becomes most desirable. A previous attempt at forceps, especially if made by someone, whose aseptic technique cannot be judged with absolute certainty, should always be regarded as indication to deliver the parturient. The obstetrician must be well aware, that if he has tried forceps unsuccessfully and the child is still alive and viable, only symphysiotomye or pubiotomye will save it. The proper time for version is past, when pelvic inlet forceps comes into consideration. Since Caesarean section *is out of the question,* perforation only remains, when the parturient does not consent to either of the above operations. In some very rare cases, in which danger to the mother gives the indication for immediate delivery, and the vitality of the child is lowered, when high forceps has failed, perforation and craniotomye has to be resorted to.

The life of such a dying child cannot be considered equal to that of a vigorous baby. However, today, scientifically as well as ethically, perforation of the living child has to be rejected and is justly regarded as a lack of obstetrical skill, except in such cases where parental permission for the child-saving operation is refused.

How shall we apply forceps to the high standing head? In order to properly insert the blades the "half hand" is to be used and special care has to be taken that none of the soft parts of the pelvis be caught in the grasp of the blades. Complete anaesthesia and the placing of the woman on a table is absolutely necessary. The modern bed is not at all useful for it is too low.

There seems to be a great diversity of opinion how the blades shall grasp the head. Hirst recommends to apply them, if possible, at the sides of the foetal head or at least obliquely. This is in my opinion equivalent to a misconception of the actual conditions at least as long as the head has not yet passed the inlet. Olshausen, Nagel, Wolff, Trauffer, advise transverse application. Budin recommends to apply axis-traction forceps transversely or obliquely. According to him the transverse application prevents a firm grasp of the head, because the blade embracing the occiput, strikes with its tip against the neck of the child and consequently does not remain in place. However, this objection does not stand the test. As stated above, pelvic inlet forceps is used chiefly in flat pelves. In this form of contracted pelvis the foetal head enters the inlet generally with the sinciput lowest. In consequence the high standing occiput completely fills up the curvature of the blade and forceps is firmly adapted to the head. In most cases of flat pelvis the sagittal suture approaches the transverse diameter of the pelvis more than the oblique. Consequently we will have to take this hint from nature and draw the head through the pelvic girdle in this position; in other words, we will have to apply pelvic inlet forceps always transversely. I cannot understand how it is possible to produce effective traction, when axis-traction forceps is applied obliquely. Any strong traction on the blades applied this way, will dislodge them. The levers of axis-traction forceps on which the force acts are connected with a movable handle; furthermore the woman is in dorsal position. These two facts make traction in any other than

frontal direction impossible. Tractive force with any other application of the blades will partly be transformed into lateral pressure and then the blades adapted with great pains and danger to the sides of the head obliquely will be forced back into the transverse diameter of the pelvis. An attempt to rotate the head in the pelvic inlet by means of an obliquely applied forceps must be strongly rejected.

This diversity of opinions can be explained by the variations of the operation itself. If the head is standing with its greatest circumference in the pelvic ring or has passed it, then even the transversely applied forceps will grasp the head obliquely. In these cases the sagital suture generally runs obliquely. Pelvic inlet forceps, as defined above, shall always be applied in the transeverse diameter of the pelvis, here alone is sufficient room for introduction of the blades without harming the mother. The left blade after introduction must be held by an assistant. After adaptation to the head the blades are locked and the handles fixed by the screw. A slipping of the blades should not occur, if it does it should be noticed in time and one may infer, that there is greater disproportion between the head and the pelvic canal than expected. If blades of the instrument used for pelvic inlet forceps are sufficiently broad and their fenestra large, the head will in most cases be grasped firmly.

How long shall tractions be continued, what force should be exerted ? The first traction should be made with the utmost care. One should always consider that the force employed acts directly and therefore is more effective. The first traction also indicates, whether the blades have a firm grip on the foetal head or not. The tractive force may be slowly increased; the single traction corresponding to each pain, may last 1-2 minutes. 6-8 tractions as a rule suffice to bring the head down into the pelvic canal. Doorland, in discussing the question of anaesthesia in forceps-operations, states that it is always necessary in high forceps, for "this operation requires traction for at least one or two hours" never required more than 6 tractions and in my opinion the extension of narcosis and operation for such a long period involves great danger to mother and child. Traction ought to be exerted in a line as nearly as possible coinciding with the axis of the parturient canal, the so-called directing line of the pelvis. We therefore try to direct the traction as far downward as possible. It is neither necessary to pull backward nor to place a speculum in the vagina for its protection. According to the investigations of Naegele and Weber we assume in the erect standing woman inclination of the pelvis of about 45 degrees. In a woman placed on a table with her limbs spread and hanging down, this inclination will be increased to 90 degrees, so that the plane of the pelvic inlet becomes horizontal. As the sacrum to the extent of its first three vertebra has an almost straight course, that part of the axis of the pelvis which has to be considered in pelvic inlet forceps operations may be regarded as a straight line, running perpendicular to the plane of the pelvic inlet. Thus it becomes apparent, that we ought not to direct the traction backward, and that even in Walcher's posture we should rather pull perpendicularly downward. In flat pelvis the head is rolled into the pelvic canal by rotation around the symphysis as a fixed point. Backward traction would hinder this mechanism rather than aid it.

Whether the head is descending or not is generally noticed during tractions. One may very well say, it can be felt. Sometimes we are able to control the progress by inspection, as part of the head becomes visible in the vulva, distended by the blades of the forceps. As soon as the child's head has descended into the pelvic cavity, the axis-traction apparatus had best be removed. After a new examination has revealed the direction of the sagittal suture, the blades have to be readjusted, eventually rotated and labor is terminated in the ordinary way.

Many a practitioner will not see the use of all these details in diagnosis, but simply declare that he never performs high forceps operation, preferring podalic version. I am sorry to say, that even textbooks share this

opinion. Olshausen justly declares it a lack of judgment, to consider version and high forceps as rivals in the management of labor in contracted pelvis. Marx read a paper at the New York Obstetrical Society, "Version or forceps—which?" M. asserts "that the position of the head, entirely above the brim, freely movable or not, as the case may be, or the head engaged by its smaller segment, whether or not movable, constitutes the only true high forceps application and this is in accordance with the teachings of the entire German school." I do take the occasion here, to remonstrate against this misstatement. The question of high forceps or version does not depend upon individual experience, but only upon indication, relative size of pelvis and head and its anatomical position. G. T. Harrison objected in the discussion in perfect accordance with the leading German doctrines against the title of the paper. High forceps and version exclude each other. If the head is movable in the pelvic inlet, version is the operation, which alone meets the existing indication for delivery. Whereas, when the head is hardly movable in the pelvic inlet, when it is moulded and adapted by the uterine contractions, high forceps is the only method. Podalic version in such cases is a dangerous experiment. We read about old time obstetricians, who by their manual skill have accomplished version, when the head was fully engaged in the pelvis and even nowadays some few boast of this maneuver. This kind of operation is not a sign of obstetrical skill, but merely a blunder. The head, engaged in or passed through the inlet, can be removed from its position only by manipulations requiring a good deal of time. Hereby the life of the mother is unnecessarily jeopardized; in the first place by the overdistention of the cervix and secondly by the possibility of infection. This naturally increases with the amount of time consumed by the manœuver.

So far we are not as yet able to keep our hands sterile for a protracted period of time. Even the use of rubber gloves, which in my own experience I have found very serviceable in version, does in no way protect against the danger of an import of vaginal germs into the uterine cavity. Both operations have their advantages. Both have their exclusive field of application. The territory of version in contracted pelvis (flat pelvis), the so-called prophylactic version, is much larger than that of high forceps. The operation per se doubtless enables us to overcome a more advanced degree of obstruction. Even the physician, who is not an adherent of a waiting policy in the management of labour in contracted pelvis, will always have enough cases left, in which high forceps operation will have a life saving effect either for mother or child. These are the cases of flat pelvis, 1. In which the physician is called after the bag of waters has ruptured. 2. In which premature labor has been induced. 3. Those where he has decided upon a waiting policy. If called early to a case of considerable diminution of the inlet—a conjugata vera of 6½ 8 cm.—version, as the operation of choice performed at a time when the os is fully dilated and the membranes still intact, followed immediately by extraction, is in *multiparas* the procedure which has the best results for mother and child. Version, if done by a skilled hand, is an operation without danger to the mother. It saves her as well as the child the injuries of a prolonged labor. On the other hand the life of the child is hereby endangered, as the time given for moulding of the foetal skull and adaptation to the deformity of the inlet is insufficient. Quite a considerable percentage of the children born with depressions or infractions of the cephalic bones die during the first week after birth. J. Simpson's assertion, that the aftercoming head passes the narrow inlet easier on account of its wedge-shape is today generally accepted. The method of Smellie-Veit for delivery of the aftercoming head (in some localities better known as Mauriceau's method) enables us to direct the proper engagement of the head in the pelvic inlet. Here traction acts directly on the head (floor of the mouth and neck of the child). Thus considerable power is exerted which might still be increased by outward pressure by an assistant and is best combined with Walcher's posture.

It is quite different in a primipara. The tightness and rigidity of the soft parts here usually prevent rapid work. Winter's statements, which are based on the large material of the Berlin woman's hospital show a mortality of 44 per cent of children in primiparas, delivered by version, whereas in 14 primiparas with contracted pelvis, delivered by high forceps, he only had two dead children—14 per cent. Some obstetricians, for instance, Broese in Berlin, who evades the difficulties in primiparas by deep incisions of the vagina and the perineum, succeeded in reducing this high mortality in version in 10 cases to 20 per cent. Notwithstanding these good results we have no right to depart from the four indications for version in primiparas with contracted pelvis, formulated by Winter. They are: 1. Prolapse of the umbilical cord. 2. Prolapse of the extremities, if they cannot be replaced. 3. Permanent unfavorable presentation of the head. 4. Absolute standstill of labor and the condition of the mother. The condition of the child cannot justly be regarded as an indication for version as proposed by Broese. We perfectly agree with Winter's observation, that, when a disturbance in the plancetal circulation indicates the delivery, those children born by version as a rule die during the performance of this operation, while those extracted by forceps, live.

The high mortality and the difficulty of the operation itself are the reasons why version should always be an exceptional proceedure in primiparas. Prophylactic version should not be resorted to in these cases. Hence high forceps has a much larger field in primiparas. It is the only operation, which delivers the mother without inflicting serious injuries on the soft parts and therefore might justly be employed, when the life of the child is in danger. It is worthy of note, that men of large experience in private practice as Fleischlen and Bockelmann, discussing Broese's paper took occasion to support our views.

If some physicians report, that they have delivered by version in cases, when labor could not be terminated by high forceps, reason herefore may be found in the fact that these men did not sufficiently consider the conditions for application of high forceps and simply applied the latter too early. Such results do not entitle us to infer, that high forceps and version are competing operations in treatment of contracted pelvis.

Pelvic-inlet forceps may be considered in all those cases, in which the passage of the head is obstructed or delayed.

The passing of the head is impeded: 1. By dimunition of the antero-posterior diameter of the superior strait of the pelvis, as in all forms of simple flat and rachitic pelvis. The same effect is produced by an oversized or exceedingly hard foetal head in a normal pelvis. 2. By uterine inertia we sometimes observe that in multiparas, though there is no considerable disproportion between head and pelvis, the head does not descend in the pelvic canal. In these cases dilitation of the os generally is incomplete and the foetus frequently undersized, here high forceps exceeds version in safety. This is the only time when high forceps may be applied to comparatively movable head. The application of high forceps in placenta previa, as recommended by some authors, deserves strong opposition. In some very few cases of low attachment of the placenta, in which we thought rupture of the membranes sufficient to stop hemorrhage, high forceps might be of value. The engagement of the head might in those cases occasionally be delayed by the insufficiency of the pains with a severe hemorrhage as the result. If the os is sufficiently dilated, high forceps will at times save the life of the child and prevent further hemorrhage.

Uterine inertia is observed quite frequently during induced premature labor, in premature rupture of the bag of waters and spontaneous premature labor, in corrected face and brow presentations and finally in some cases, in which the foetal head enters the antero-posterior diameter of the pelvis with its longest diameter. Manual correction of these irregularities usually secures spontaneous delivery. Cessation of the pains and ensuing danger to the mother, may necessitate high forceps. It is chiefly the uterine inertia, which forces us to pelvic inlet forceps in the flat pelvis. It occurs comparatively frequently in multiparae, with pendulous abdomen

and in most of these women an abnormal inclination of the pelvis may also be noticed.

The parieto-anterior presentation of the head is no hindrance to pelvic inlet forceps-operation, it requires no correction. In parieto-posterior presentations, when the head is impacted in the inlet, perforation of the living child should never be done, before axis-traction forceps has been tried. Just as well, as spontaneous delivery occurs sometimes in this presentation, pelvic inlet forceps too might secure birth of a living child.

Statistics of high forceps operation at our command, are so far of little use in the valuation of the operation. The indications vary with the different schools. Attempts at forceps, forceps on dead and dying children are all included in these reports, necessarily influencing the mortality rate. Even a general understanding of pelvic inlet and high forceps as formulated above is wanting. Moreover the various statistics from university hospitals bring the results of different operators, of the beginner as well as the skilled obstetrician. Budin reports 63 axis-traction pelvic-inlet forceps, operations from the maternitê in Paris, with a mortality of 18 children i. e. 30 per cent, 6 of these were dead before the application of the forceps. Deducting these 6 cases, the mortality rate would be reduced to 16 per cent. All mothers recovered. Eckhart, in a recent report, reviews the forceps operations done in the dispensary during 10 years in Olshausen's clinic. 140 forceps with a mortality of children amounting to 35.74 per cent. 24 high forceps in contracted pelvis gave a mortality of the children of 25 per cent. 6 dead children, 5 of them perforated, 2 of the mothers died. Winter's much better results from the same hospital have been mentioned above. Münchmeyer reported 19 cases with 21 per cent dead children and all mothers living. Toth, from Tauffer's clinic in Budapest, states 34 cases of high forceps. Mortality of the mothers 2, 9 per cent, of the children 20, 5 per cent. Attempts with consequent perforation are not included. A more recent report from this hospital tells of 23 high forceps operations, with a children's mortality of 22 per cent. These statistics include all the children, which died within 10 days after delivery. Tauffer follows the same principles and indications, which are given in this paper. Nagel (Berlin Charitê) one of the first advocates of axis-traction forceps reports 28 cases of high forceps in contracted pelvis, amongst these 9 primiparae with 19 living children (perforations included). Wolff, from the same hospital, reports 69 cases of contracted pelvis and axis-traction forceps. Mortality of the children 29 per cent; one of the mothers died of sepsis. Deducting the unsuccessful attempts, Wolff's child mortality is reduced to 14 per cent.

A comparison of the results of prophylactic version and high forceps is not possible. For the latter is often undertaken as a last resort before perforation, whereas prophylactic version usually is performed before the bag of waters is ruptured, with the child in best condition. Prophylactic version is undertaken with the intention of overcoming the diminution of the pelvic inlet, and has to be regarded as a therapeutic factor in the management of contracted pelvis. Pelvic inlet forceps can not be considered as such, for it only comes into play to aid nature, after the head has been moulded by sufficient pains.

Kliehn gives the general average of child mortality after high forceps as 30, 3 per cent. After deduction of attempts followed by perforation this rate comes down to 17, 1 per cent. In my opinion child mortality ranges between 17 and 20 per cent. It is evident that the high forceps mortality is lower than that of version (general mortality of children after all versions is 44.5 per cent), in fact it ought not to exceed very largely common forceps mortality.

The various reports of high forceps operations agree as to the uniformly low maternal mortality. The researches of Walthard have furnished a positive foundation for our clinical experience in puerperal infections. We were perfectly right in regarding the unusually protracted labor with its consequences, the crushing of the tissues as a main factor in the development of infections. We nowadays know, that it is not the operation nor

the intsruments, but chiefly the prolonged labor, which favors the so-called "autoinfection." It is the general teaching of the Schroeder-Olshausen school, that high forceps should not be used, except when the life of the mother is directly threatened. The weakening of the foetal heart sounds demands high forceps operation just as little as symphysiotomy or pubiotomy. Olshausen adds that danger to the child and uterine inertia may give an occasional indication for high forceps in contracted pelvis. If we take direct danger to the mother as the only indication, then the application of high forceps will be rare indeed and many operations will be mere formal attempts, preceding perforation. This reserves the operation for difficult and desperate cases only and the statistics must be according, (cf. Eckhart Berlin). For the less skillful man, it naturally is best to follow that indication. Only large experience and proper knowledge of the proportions between the head and the pelvic canal, permit as further indication the threatened foetal life, as heralded by passage of meconium by several hours combined with a sinking of the foetal heart's action. For the experienced man it is but a step farther to apply pelvic inlet forceps, if labor remains stationary for a number of hours. The observation of the above named four conditions is understood. As in common forceps operation, it is not absolutely necessary to wait until there arises direct danger to foetal or maternal life, if there is a possibility to deliver by pelvic inlet forceps, without serious harm to mother or child. Especially in the flat pelvis we note quite frequently a sudden cessation of the pains, following a prolonged period of strong pains, which have dilated the os and moulded the head. Any kind of narcotic administered, procures sleep for such an exhausted woman during some hours and many times the renewed and more effective contractions brought on after the rest, will expel the child.

But the question is, can we rely on this? Shall we expose the woman tortured for hours to another period of suffering. In my opinion, no. If the child's head can pass the obstructed inlet then there must be a possibility of pulling it through by axis-traction forceps. The more contracted the pelvis, the more advanced labor must be, and the more moulded the foetal head, if we may expect to employ pelvic inlet forceps successfully. It is not possible to state an exact lower limit of contraction for pelvic inlet forceps, as little as for inducement of premature labor or prophylactic version. A conjugata vera of 7 cm. represents probably this limit.

Every experienced obstetrician knows, that even after the head has passed the inlet of the flat pelvis, the life of the child is still in the balance, particularly in cases of difficult and prolonged labor. We are anxiously watching the foetal heart sounds in such cases, the forceps is ready to deliver, if necessary. We know very well that the three or four pains, necessary to expel the child, sometimes do not appear in time. But despite our care many a child dies during this second stage of labor. It can not be disputed, that a child delivered by pelvic inlet forceps, might as well be borne spontaneously. On the other hand should the skilled obstetrician subject mother and child to all these dangers? This must be answered in the negative. When the general conditions for application of the pelvic inlet forceps are present and labor is abnormally delayed, the obstetrician has a right to terminate it. It should never be attempted without sufficient and well grounded confidence in the successful termination. Direct danger to maternal life furnishes the only exception to this rule. In those cases the mother must be delivered, without regard to the life of the child. These are diseases of the heart, kidneys, eclampsia, psychosis, tympany of the uterus, high fever combined with accelerated pulse and threatening uterine rupture. In multiparae with movable head, version is preferable under these conditions. In all cases of considerable distention of the lower uterine segment or in primiparae, pelvic inlet forceps is the proper operation, competing only with pubiotomy. Under these condi tions, as well as in pathological presentations, the operation represents nothing more than a mere attempt and this should not prejudice one against the benefit of pelvic inlet forceps. Everyone will think it perfectly absurd to

try a pubiotomy in a case with absolute indication for Caesarian section. However, many obstetricians still expect wonders from axis-traction forceps. In their opinion the latter can overcome any grade of disproportion between head and pelvis.

I personally have ben well satisfied with the results of pelvic inlet forceps and have gradually extended my indications. My last 10 cases, of which notes are still in my hand, have not shown any serious harm to the mother, excepting a complete tear of the perineum in a primipara, caused by the necessarily rapid development of the shoulders of the overgrown child. (This operation was done with a common forceps). Three of the women were primiparae, 8 of these cases were observed in Berlin in dispensary practice, two in Chicago. One child died at the end of the first week. It was a weak child and its death cannot be charged to the forceps. Four of the children presented deep pressure marks on the head from the pelvis. In one of them the mark measured 8 cm.

Most of the pelves were flat, conjugata diagonalis 10-10½ cm. In two cases with small children, the intrauterine colpeurynter was used on account of uterine inertia. Some of the women had been in labor for 3-5 days, one had been deserted by her physician. Prolonged labor and insufficieny of the pains were the main indications in my cases. In one case only do I find notes of a weakening of foetal heart sounds. It is the case of the complete tear of the perineum. Meconium had passed from 6 of the children for several hours.

To summarize the indications for pelvic inlet forceps:

1. Direct danger to the mother (here an attempt only is permitted).

2. Danger to foetal life. Sinking of the foetal heart sounds, while meconium passes for hours.

3. Complete standstill of labor due to uterine inertia. In other words, when fixed head remains stationary in pelvic inlet for a number of hours because pains are not forceful enough to press the head through the inlet.

Second and third indication are only justified when the above named four conditions for high forceps are present.

Whoever adheres strictly to these conditions will discover that pelvic inlet forceps with these additional indications is a most beneficial operation. In many cases of flat pelvis he will save the life of the child. He furthermore will spare the mother a great deal of exhausting work and shorten her labor at a time most critical to her and her child.

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PRISON TUBERCULOSIS.

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Tuberculosis is a disease that necessarily requires for its treatment plenty of fresh air with good hygiene and sanitation, part of but not all can be obtained in the ordinary prison; however, in order that tuberculosis may be stamped from our prisons it is necessary that the physician in charge carry out the most rigid hygiene and sanitation possible. To do this it will be necessary to first reconstruct the cell houses and place them in a more sanitary condition. I quote from the commissioners' report Joliet Penitentiary, 1902: "The two wings of the penitentiary contain 900 cells in which to take care of 1,200 or more prisoners. It is necessary, therefore, to put two prisoners in many of the cells, which are only 7 feet long, 7 feet high, and 4 feet wide; and we feel that we can present the matter no more forcibly than to quote from our last biennial report and say that: When one thinks of two men spending never less than 14 hours each day during six days of the week, and on the seventh day nearly twenty-one hours, in a space so reduced, and with a slop bucket in the cell for their use in responding to calls of nature which no care can prevent from being offensive and pestilential in every sense of the word, he is compelled to ask what excuse the great State of Illinois can offer for compelling the management of this penitentiary to so deal with men who are required by law to serve sentences here, that they must eat, rest and sleep in quarters so contracted, so repellant, and so utterly unfit for the purpose, that their very existence is a disgrace to the State that permits it."

Here we only get the layman's view of it, but he cannot understand or conceive the tremendous amount of infection that accumulates under such conditions and the methods by which it travels.

In making my first inspection of the cell houses at Joliet, I found them to be of the old block stone type, the roof built flat with the cell blocks preventing any circulation of air. This was compensated for to some extent; in the winter by forcing with a large fan fresh air over steam pipes to a ventilator in each cell. In the summer by reversing the fan the foul air was withdrawn; regardless of this, at night the air was very foul and contaminated.

I at once made a protest against this condition and requested that something be done to give better ventilation; which during my service was partially accomplished by putting a new roof on the east wing, designed by the State Architect, so as to extend well up over the cell blocks, with many ventilators at the top giving a perfect circulation of air. This was completed at the latter part of my service and reduced the number reporting at sick call from this section of the prison to such an extent, that I immediately recommended to the board of commissioners that a new roof of the same construction be put on the west wing; which suggestion I again made in my biennial report. I am given to understand this was completed this year.

A dinng hall was under construction during the latter part of my service which is completed and now in operation. This does away with the men eating in their cells.

These improvements should reduce the mortality at Joliet prison much lower in the future than it has ever been before.

In prisons where tuberculosis is on the increase, men are confined in such close quarters that it is but a short time until the new inmates contract the disease. Some of these prisons have no hospital facilities whatever,

either for general or tubercular cases. Usually an old building is utilized as a hospital with no idea of sanitation, as was the case in one of the prisons I visited. This building contained one large ward in which all cases, both surgical and medical, were placed, so close together that the cots almost touched each other. Most of the medical cases in this hospital (?) were tubercular. The prison physician confided to me that tuberculosis seemed to be on the increase, but there was no way of retarding it.

How could it be expected to stamp out a contagious disease under such conditions? Tubercular patients must be isolated more particularly in prison than anywhere else.

The States owe it as a duty to the non-infected members of their community, in making the sanitary conditions of their prisons the very best, in order to stamp out these hot-beds of contagion.

Convicts sentenced for only a short time enter these institutions, contract tuberculosis, serve their sentence, are discharged and roam about at large to spread the disease and die outside the prison walls.

I quote from my biennial report of the Illinois State Penitentiary, Joliet, Sept. 30, 1902: "Tuberculosis, that dreaded of all prison diseases, was reduced by my predecessor 50% and of which I have now reduced an additional 33⅓%, making the lowest death rate from this disease in the history of the institution; the death rate from all diseases has been brought down to a little over 1% and as the records show that 31% give a history of tuberculosis, either inherited* or acquired, some already advanced in the last stages, and 15% a history of syphilis, it is safe to say that the death rate is practically nil, that is, much smaller than in a community at large that is broken down, poorly fed and suffering from disease the result of debauchery, as the average criminal is on the outside."

Referring to the following table taken from my biennial report of same date, it will be seen that the deaths from tuberculosis are ½ of 1%, the remainder being caused from other diseases.

Comparative statement for fourteen years from 1888-1902:

Year ending.	Total number of deaths.	Number of deaths from tuberculosis.
Sept. 30, 1899.....	24	14
Sept. 30, 1890.....	39	22
Sept. 30, 1891.....	27	15
Sept. 30, 1892.....	40	26
Sept. 30, 1893.....	38	25
Sept. 30, 1894.....	39	27
Sept. 30, 1895.....	46	34
Sept. 30, 1896.....	37	28
Sept. 30, 1897.....	18	14
Sept. 30, 1898.....	32	21
Sept. 30, 1899.....	26	14
Sept. 30, 1900.....	19	7
Sept. 30, 1901.....	14	6
Sept. 30, 1902.....	17	9

This makes during my service a total of 31 deaths from all causes, 15 of which were due to tuberculosis.

Too much care cannot be exercised in the inspection of the cell houses, if they contain the old bucket. Some of the creolin compounds should be used, and the same said of all closets in the cells, even where they have running water. After the buckets were carried out and emptied they were well washed with a creolin compound and exposed to the air all day.

After the men left for work the cell houses were well ventilated, galleries and floors scrubbed with soap and sand and thoroughly flushed out. The bedding taken out from each cell and allowed to air. In the winter it was impossible to allow the ventilating to last long, as it would chill the stone blocks to too great an extent, but in the summer it was continued all day.

The shops were inspected every day; here cuspidors were furnished, filled with damp sawdust, emptied every day and burned.

In making this routine inspection, if I saw a man who showed signs of anaemia, he was ordered to sick call at once, where he received a thorough physical examination, and

*Prison Records call for a History of Heredity.

although there may have been no further signs of tuberculosis than this condition, there was always the suspicion that it might be the beginning of the disease; consequently he was given the benefit of the doubt and transferred to the yard at once.

The tuberculin test was never administered; however, I believe that here it would be of the greatest value, as it would make an early diagnosis and save a great many that would otherwise go on to the advanced stages undiscovered; furthermore, it would make a differential diagnosis between the soap eaters (who are a class of convicts wishing to get their work changed and have an easy "job" in the yard, eat a certain amount of soap each day until they become very anaemic and resemble in many respects the patient with the beginning anaemia of tuberculosis.

Again, it would give the diagnosis long before the tubercle bacilli could be found in the sputum, which when found in a prisoner usually means death in a short time.

At the Indiana Reformatory, Dr. H. C. Sharp, physician in charge, together with Dr. Jewett V. Reed* of the John Hopkins Hospital, have carried on a line of experiments in which they show that out of 965 men in the institution who received a physical examination, 24 were found to be definitely tubercular and were not tested with the tuberculin. The remaining suspicious cases were tested with the tuberculin, of which 102 gave a definite tubercular reaction, making a total of 102, or nearly 13%.

After ordering a man up and giving him a thorough physical examination, if he showed any roughness at the apex of the lungs or any of the other signs of tuberculosis, I immediately ordered his work changed and transferred him to the yard. Here he was kept in the air during working hours, and if there was not enough work about the yard for all I transferred there, the keeper would put them breaking stone. This may seem rather laborious work to give a tubercular patient; however, he sat down to his task in a shed in the open air and probably never broke more than a bucket full in a day.

The men transferred to the yard I gave a special ticket to the convict kitchen, where one table was reserved for them at which they received a very nourishing diet, finishing with a glass of milk.

With the exception of the outdoor air, I believe nothing better in tuberculosis than a stuffing diet. Where these men showed marked improvement (as the soap eaters would very rapidly), I transferred them back to the shop, where they would get light work.

For all the men transferred to the yard I ordered woolen underwear, both summer and winter. And here I may state that I did the same where any man was employed where the temperature was extremely hot or cold.

In the winter the men in the yard were supplied with overcoats aside from their heavy prison suits.

All tubercular patients that were not in the hospital were changed to the floor in the cell house where they had a cell by themselves.

At sick call all the tubercular patients came up with the others and received their treatment. Aside from treating any slight ailment, they were each furnished with an 8-oz. bottle of extract of malt, each dose containing from 2 to 4 gtts. of beechwood creosote to a tablespoonful of malt, according to the tolerance of the patient's stomach. In many instances this dose was greatly increased. I believe that good results were ofttimes obtained from this treatment. If the cough was very severe, an anodyne cough syrup was prescribed. If I saw at sick call that a man was unable to return to the yard, he was taken into the hospital and put in the tubercular ward, which was situated on the third floor. This ward was completely isolated from the rest of the hospital and cared for by two attendants, one for day and one for night, who were never allowed to go into the other wards of the hospital, neither were any of the attendants allowed to go into the tubercular ward; and it was part of the duty of my assistant who had the care of the hospital under my supervision to see that this was carried out.

The tubercular patients' meals were cooked

*Journal American Medical Association, February 4, 1905.

down stairs with the others and sent up to the tubercular ward, where they were furnished to the patients from their own table, at which they had their own table utensils. After the meal these utensils were washed and sterilized in the tubercular kitchen and none of them allowed to leave it.

This ward was always well ventilated, the windows being open sufficiently to give a free circulation of air without causing any draught, but kept at a good temperature at about 70.

Aside from the general ward, there were three rooms where I placed patients who were in the last stages with no hope of recovery.

After a death the room was thoroughly fumigated with formaldehyde and from time to time I would order the whole ward fumigated on general principles.

Much has been said of disposing of tubercular sputum. I tried the paper cup, but believe it the dirtiest and most liable way of spreading the infection of any means I know of, as it is simply impossible to keep it sterile. Instead I had each bed furnished with a white enamel one pint cup; in this was placed a little water (bichloride could not be used, as my patients were very liable to drink it should they have any idea as to what it was). These cups were emptied often by the attendant; never allowing them to remain unemptied over twelve hours and a new cup substituted. The one containing the sputum had poured into it 4 oz. bichloride, allowed to stand for one hour, emptied, washed and sterilized.

Under the existing conditions it is impossible to give prisoners the open air treatment and the best the prison physician can do is to come as near to it as possible. This can be accomplished in part by keeping the windows open continuously in the tubercular wards of our prison hospitals, both summer and winter, furnishing the patients with clothing suitable for the season. However, this line of treatment cannot be carried out at Joliet, where nature gave a healthy atmosphere, but owing to the encroachment of the rolling mills of the Ilinois Steel Company which now stand in close proximity, the air is percolated with gases and smoke which are daily and nightly belched forth from its mills, enveloping the whole prison. Although those in the early stages transferred to the yard improve and get well in this atmosphere, to those in the later stages in the hospital this gas and smoke acts as an irritant.

I cannot agree with Dr. Samuel Hopkins Adams, who is quoted as stating that the incarceration of consumptives, incipient or otherwise, was practically capital punishment. All prisons are not alike, as is plainly shown by my statistics at Joliet.

The average criminal on the outside lives a very irregular life with poor sanitary surroundings, and a diet consisting mostly of free lunches between "jobs" and one of debauchery after a "haul." In prison his hours are regular, with a wholesome diet, and if the sanitation of the prison in which he is confined is carried out properly, his physical condition will improve. Many convicts who upon entering are of poor general physique, after remaining for a time improve and become strong, even under the close confinement.

In prisons the most rigid discipline must be maintained and it is through this that a certain number of convicts bring tuberculosis on themselves by repeated punishment in solitary confinement.

Out of 1,200 or more convicts confined at Joliet, from 700 to 800 have never been in solitary confinement, 200 to 300 have received slight punishment. The remaining 100 to 200 of the lowest and most degraded thugs and "hold-up men" that the prison contains, so far below the average criminal that they are termed among other convicts "rats," from the fact that they never do anything but a low "job," are the class that keep the solitary busy. In the year 1901, out of a total average of 1,281 convicts, there were 37 punishments. During the year 1902, with an average of 1,273 convicts, there were 44 punishments. Although this class of convicts know what to expect by becoming refractory, continue, and by being sent into solitary confinement time and time again tuberculosis ultimately results.

If the convict who at the time knows what he is doing, breaks the rules of the prison to which he is sent, becomes refractory, and is repeatedly sent into solitary confinement until tuberculosis develops, neither the State nor the prison authorities can be held responsible for such action, and it is well for the good of society at large that this class of criminals take so scientific a method of exterminating their race.

In conclusion, I will say that the proper treatment of tuberculosis is:

First. It remains with the States to build proper sanitary cell houses.

Second. The prison physician must keep his patients in the open air as much as possible, and when in the hospital isolate them.

Third. To keep all tubercular patients clothed with flannels both winter and summer.

Fourth. Give a good, nutritious diet with plenty of milk.

Fifth. Anodynes for excessive coughing—good tonics—and I believe that good results are obtained from guaiacol carbonate, guaiacol and creosote.

STERILITY IN THE MALE.

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The fact that the knowledge and treatment of genito-urinary diseases have rapidly progressed during recent times, justifies the hope that the matter under consideration may profit, if more attention is paid to it. Sterility in the male means inability to successfully impregnate the female ovum. Impotentia coeundi is due to an imperfect erection of the penis. Impotentia generandi or sterility, with which this paper deals, is a broader term, implying more than incapacity of copulation only. It is frequently found in men, vigorous in intercourse, and with an emission of an apparently healthy seminal fluid. The causes which prevent the ejaculation of fertile semen into the vagina are many. We will consider for a moment the physiological action of the seminal secretion. The spermatozoa are formed in the testicles, whence they pass through the vasa deferentia into the vesiculæ seminales. There they are stored away until the time of ejaculation. At this time the contraction of the smooth muscular fibres of the ampullæ, supplemented by the contraction of the accelerator urinæ, forces them into the urethra. During their passage through the urethra they become mixed with the secretions of the prostate, the Cowper's and the urethral glands. At the same time the verumontanum swells up and prevents the back flow into the bladder. It can easily be seen how the interference with any of these acts must result in failure of the semen, to reach the vagina, and ultimately in sterility.

Assuming first the power of erection and emission to be normal, alterations of the seminal fluid may frequently be the source of its inefficiency. We will now consider the absence of spermatozoa, the Azoospermia. This is often overlooked in the man and as Fuerbringer remarks, frequently makes the innocent woman a victim of all kinds of operations before the microscope establishes the real facts. It is self-understood that no spermatozoa are formed in congenital absence of both organs—anorchism—nor after bilateral operative removal of these organs—castration. The same applies to the absence or deficiency of the excretory apparatus or parts of it. Retention of the testicles in the inguinal canals will prevent their development or cause their atrophy and will finally incapacitate them to fulfill their function. Diseases of the testicles, which produce pathological changes in the tissues, so as to impede the formation of a normal secretion or obstruct their elimination, are frequent causes of azoospermia. Syphilitic orchitis if not treated early and sufficiently, tuberculosis if advanced, and bilateral, new growth, may be mentioned in this connection. The entire testicle need not be affected, localized foci may form sufficient obstacles, to prevent the escape of the spermatozoa. Next to the testicles, the obstructions may be found in the epididymis, the vasa deferentia, the seminal vesicles, and the ejaculatory ducts. Most

common and therefore clinically most important, is the gonorrheal epididymitis. It leaves usually a nodular induration in the globus minor of a fibrino-cicatrical nature which obstructs excretion permanently. The predilection for this place is due to the fact that the inflammatory process remains longest in this dependent part. Belfield's recent proposition to drain and flush the vasa deferentia and the seminal vesicles in purulent conditions, suggested to me that by the same means these frequent consequences might be prevented. At the present time we are satisfied to treat acute epididymitis symptomatically only—that is, we relieve inflammation, swelling, and pain, but we forget that in this way we give the suppurative process the necessary time to produce a permanent obliteration. While gonorrhœa is found most frequently in these parts, syphilitic and tubercular lesions are by no means uncommon. In all these conditions the ejaculated fluid is devoid of spermatozoa. But the change in the seminal fluid from the normal need not be found as azoospermia only. In the absence of all the above mentioned pathological conditions in the spermatic organs, normal spermatozoa may be formed, only to meet during their elimination with a new interference. Chronic purulent affections of the seminal vesicles and the prostate gland frequently destroy them in their entirety. The microscopical picture shows them, decreased in number, and lifeless in the field. In the last mentioned case early diagnosis and efficient treatment will often completely restore proper function. The treatment of azoospermia otherwise is unsatisfactory. Aspermia, which has been alluded to several times in the remarks above, is due to an impediment in the normal expulsion of the seminal fluid. Copulation is not terminated successfully when ejaculation takes place. Conditions which prevent its deposition into the female generative organs will prevent the ultimate aim of fertilization and cause sterility. They may be organic or purely functional; they may disappear or remain permanently. Congenital absence or abnormalities and acquired obstructions of the ejaculatory ducts have been mentioned already; considerably more important from the clinical point of view are the sequels of chronic gonorrhœal inflammations of the prostate gland and the urethra. Chronic infiltrations or sclerotic changes in the prostatic urethra may close up entirely the ejaculatory ducts; or their openings may be displaced, so as to point backwards, in which case the seminal fluid is forced back into the bladder. Hard concretions may form in the ducts or their openings, composed of phosphates and carbonates of lime, containing a nucleus of dead spermatozoa. Reflex contractions of the neck of the bladder, tenesmus, and pain during intercourse—the so-called spermatic colic—are sometimes diagnostic features of this condition. Strictures of gonorrhœal or traumatic origin may render the urethral canal impermeable for the semen; they may still permit the passage of urine, while the penis is in flaccid condition, but during erection the lumen becomes so narrowed as to prevent seminal passage. Finally a very tight phimosis which does not give way even during erection may form an efficient barrier. Functional aspermia is due to disturbances of the central nervous system; the patients are highly nervous as a rule. In such rare cases, erections take place without emission. It may be due to an atonic condition of the muscles of the genital tract, with loss of contractility, or to anæsthesia of the genital cutaneous covering as found in some spinal diseases and in others like leprosy. Malemission, which means expulsion of the semen in a wrong direction, is another cause of sterility. Some conditions which may cause it have been mentioned before; others are hypospadias and epispadias of high degrees, especially the first. The peno-scrotal variety produces such effects most frequently. From this description of the causes of sterility it will be seen that the prognosis will depend on their nature. If functional only, or due to pathological conditions, not followed by destruction and permanent obstruction of tissues, the prospects of recovery are favorable. Prophylaxis should play an important role in the prevention of sterility.

A REPORT OF TWO CASES OF COMPLETE PERINEAL PROSTATECTOMY BY YOUNG'S TECHNIQUE.

BY JACOB FRANK, M. D., CHICAGO.
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Case 1. C. B., age 70, consulted me May 15, 1904, and gave the following history:

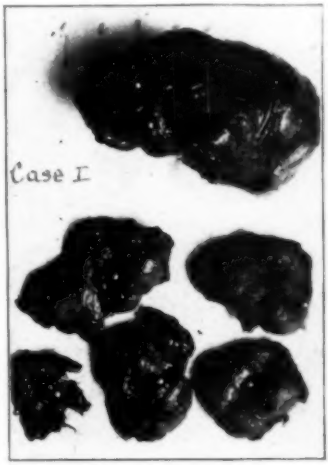
Fourteen months ago he began to complain of dysuria, voiding small quantities frequently and had to resort to the occasional use of the catheter the first nine months and catheter life for the remaining five months. He complained of insomnia, anorexia and great loss in weight.

Examination per rectum determined a large prostate which could also be felt above the pubis. It was not very tender and slightly movable. The patient was told to urinate, and after passing a small quantity, he was catherized and eight ounces of residual urine was withdrawn.

He was sent to the hospital May 29th, for further observation. Urinalysis: Quantity, 24 hours, 58 ounces; turbid reaction acid; specific gravity 1023; no sugar; abundance of pus cells; some squamous epithelium; no blood; urea 2.1; albumen present; probably due to the pressure of pus.

The bladder was catheterized daily with the prostatic catheter as the soft rubber one could not be introduced, and was irrigated with boric acid solution at a temperature of 110° F; normal salt solution twice daily per rectum.

The operation was performed June 2, 1904, under chloroform anaesthesia. Young's technique was followed. The patient was put in the exaggerated lithotomy position; a grooved sound as a guide for urethrotomy was introduced into the bladder; an inverted V-shaped incision was made, the apex of which was just over the posterior bulb, and the two arms, each about five centimeters long, midway between the anus and ischial tuberosities. After exposing the superficial muscles by blunt dissection, the central tendon was caught by a clamp near the bulb and divided; this freed the sphincter and levator ani from their anterior attachments, and exposed the rectum, drawn forward by the recto-urethralis muscle. This muscle was then divided and the membranous urethra brought into view. This latter step not only exposed the membranous urethra, but prevented injuring the rectum. After exposing the membranous urethra, the muscles were retracted and the apex of the prostate brought into view. The membranous urethra was opened on the previously introduced grooved sound, and the edges retracted with transfixed silk sutures which serves as retractors. A 30 French sound was then introduced through the urethral incision into the bladder, and the sphincter dilated with an easy to and fro motion of the sound. The prostatic tractor, closed, was then carried into the bladder, while the edges of the urethral



wound were laid apart by the silk. As soon as the beak of the tractor was free in the bladder, the thumb-screw, which fixes the blades in position, was loosened, the blades rotated 180° by means of the external blades, and fixed by tightening the thumb-screw. The instrument was then handed over to an assistant, who made enough traction on the instrument to bring the gland clearly into the field. By lateral retractors and the traction produced by Young's tractor, the entire posterior surface of the gland was exposed. The capsule was now incised to a depth of 1 cm. on each side of the median line for almost the entire length of the posterior surface of the gland the two lines

being convergent, the widest part measuring 1.8 cm. the narrowest 1.5 cm. The bridge of tissue contains the ejaculatory duct, and hence in some of Young's patients potency was not impaired. By means of blunt dissection, and with the aid of Young's forceps, the right and median prostatic lobe were enucleated piecemeal. (Fig. 1.) The left lobe was nucleated *in toto*, measuring five by eight centimeters (Fig. 1.) The tractors were then withdrawn, and a double drainage tube introduced into the bladder through the opening in the membranous urethra, the inlet tube being about one-third the size of the outlet tube. This double tube was fastened with a suture to the upper angle of the perineal wound. The lateral cavities left by the enucleated prostatic lobes were packed with plain gauze, and the drainage tube connected with a siphonage arrangement, and continuous irrigation with normal salt solution, 110° to 120° F., thus kept up, the flow being regulated by means of a screw-clamp in the inlet tube. The irrigation was commenced on the table to prevent blood clots forming with in the bladder.

On the second day after the operation the patient developed an orchitis on the left side, very likely due to the extreme force used by the assistant in making the traction. The swelling was successfully treated with ice-bags, and elevation of the scrotum. The rectal temperature for the first week ranged between 100° and 103° F.; pulse between 78 and 98. The temperature was due very likely to orchitis, and also to the warmth of the irrigation fluid flowing so near the rectum. No shock; pain for the first few days was relieved with one-quarter of a grain of morphia administered hypodermically. Two hypodermic injections in all were used. On the second day the gauze packing was loosened, and some of it withdrawn every day until all of the original packing was removed, and the superficial wound kept open thereafter with a small gauze pack. On the fourth day, the patient sat up in bed with the aid of a back-rest. At the end of the week the continuous irrigation was stopped, and the drainage tube withdrawn. On the ninth day a 28 French sound was introduced through the urethra into the bladder, when a soft rubber catheter was carried into the bladder through the meatus, fastened, and the bladder irrigated twice daily with boric solution through this catheter. Five days later the catheter was withdrawn, no urine yet coming through the meatus, as the perineal opening was still too large. On the nineteenth day the patient voided some urine through the meatus, but most of it being passed through the perineal opening. From this time on the patient passed more urine daily through the natural channel, and at the end of the fourth week most of the urine passed through the natural opening at intervals of every two hours. With a 30 French bougie his urethra was sounded every other day, and irrigated once every day after the second week. In five weeks after the operation, patient left the hospital with a very minute perineal fistula, which was dressed daily. At the end of the sixth week all was healed, patient urinating every three to four hours. The urine was quite clear, and there is no residual urine. He enjoys very good health, eats and sleeps well, and has gained considerably in weight. He was impotent before the operation, and is so now.

Case II. C. D., aged 62. Family history, negative. Personal history: He had always enjoyed good health, and was working hard at his trade as a machinist. Present trouble dates back since September, 1903. Painful urination; could not empty bladder entirely; urinated twice or oftener during the night. In March, 1904, he had to be catheterized once. For the past three months prior to his appearance at my office, he had to urinate every hour, and very often every half hour; the same nights, passing only a little urine at a time, due evidently to a great deal of urine remaining in the bladder, passing only the overflow each time. When he consulted me at my office, his condition was this: He appeared pretty well run down; complained of a great deal of pain in the region of the bladder and in the lower part of his back. He felt better sitting up than lying down; he could not sleep at night on account of the pain and the frequent micturition.

Examination. The patient showed quite a loss of subcutaneous fat, although he had never been fleshy. His color was fair. Heart and lungs negative. Arteries sclerotic. Had

varicose veins, and right inguinal hernia. Lower part of abdomen tender and rigid. Bladder when distended with urine extends three and one-half inches above symphysis; voids only from one to two ounces of urine at a time. No sound or catheter could be introduced. Examination of prostate per rectum revealed a very large, hard and tender mass which seemed fixed; the lobes could not be defined.

Examination of urine: Fifty ounces in twenty-four hours; reaction acid; no albumin; small number of pus cells; urea 1.8 per cent. He entered the hospital October 29, 1904. He was put to bed and allowed a liberal liquid diet consisting mainly of milk. Urotropin, 5 grs. every four hours was administered, normal salt solution per rectum twice a day. Bowels thoroughly emptied.

Operation performed November 1, 1904, under chloroform anaesthesia. Young's technique was followed as in case I.

In this case, the removal of the prostate was much more difficult, as it was very dense and adherent to the capsule and surroundings. The individual lobes could not be recognized. The gland was found to my great surprise very much smaller than I discovered upon rectal examination; it had to be removed piecemeal with a knife and tissue forceps. No staff could be introduced into the bladder. I tried a 16 F. sound which had a smaller curve than the staff, but only succeeded in introducing it up to the point where the urethra was strictured. The urethrotomy was made below the point of the sound. The wound was packed with iodoform gauze and a double tube for continuous drainage introduced into the opening of the membranous urethra. On the fourth day the patient developed a slight orchitis on the left side, which was successfully treated by elevation of the scrotum, and the application of an ice bag. On the third day the packing was gradually loosened. The continuous irrigation was stopped on the fourth day; the tube was removed on the sixth day. A 26 F. sound passed easily into the bladder. The bladder was irrigated twice daily with boric solution and by the end of the fifth week every third day. The packing was removed on the tenth day and the patient first urinated through the meatus November 29th. December 25th, patient developed right-sided sciatica, which disappeared in a few days under treatment. He sat up in bed with the aid of a back-rest on the third day and was able to walk around in three weeks. Perineal opening completely closed December 14th. Patient was impotent before operation and is so now. The stream is very good, and no residual urine which is very clear.

The fibrous condition of the prostate of this case can be seen on the slide under the microscope.

100 State street.

DIFFERENTIAL BLOOD COUNT, TECHNIC AND CLINICAL VALUE IN SEPTIC CASES.*

BY CHARLES HILL, PH. D., M. D., CHICAGO.

Assistant Professor of Histology and Embryology Northwestern University Medical School, Chicago.

Spreading Blood for Staining. There are three standard methods employed in making a spread:

1st. Place a drop of fresh blood between two cover glasses. Slide one over the other so as to leave a thin film of blood on each cover.

2d. Place a drop of fresh blood on a glass slide. With the edge of a second slide spread the blood evenly by drawing the second slide, with a steady motion, over the free surface. The blood film should cover two-thirds of the first slide. (See Fig. 1.)

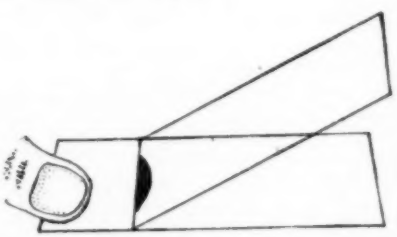


FIG. 1.

3d. Saturate the end of a thin filter paper, or cigarette paper, with fresh blood. Draw this over the surface of a glass slide much as in the preceding case.

The covers and slides must be perfectly clean, particularly free from any oily ma-

terial, otherwise the blood will not spread evenly. The second method is perhaps most satisfactory. The third method is a very good one, but requires a little more blood.

Fixing. The classical method is to immerse the covers, or slides in equal parts of absolute alcohol and ether. Fix in this solution for one to twenty-four hours. The spread should be allowed to dry in air before placed in the fixing solution.

Staining. After fixing, dip the preparation in water and treat as follows:

1. Haematoxylin, or methylene blue, or any nuclear stain, 5 to 10 minutes.
2. Tap water.
3. Eosin, 1 per cent solution, 3 minutes.
4. Water.
5. Dry in air.
6. Dry in fingers, over flame.
7. Mount in balsam and cover.

A few drops of the stains are placed directly upon the blood spread, while the whole slide may be immersed or rinsed in water.

COMMENTS.

In suspected infectious cases, such as appendicitis, where differential count is very urgent, the above method requires too long a time. Most accurate counts can be made from slides prepared in the following manner:

1. Secure a thin spread on glass slide.
2. Dry in air.
3. Heat gently over flame. This fixes the film to the slide so that the stain or water will not wash it away.
4. Haematoxylin, or methylene blue, or Loefler's blue, 3 to 5 minutes.
5. Remove stain with water.

A differential count of white corpuscles may now be made without drying or covering the specimen with a cover glass. If the examiner is familiar with normal blood he can quickly tell, by the abundance of white corpuscles, if a leucocytosis is present. It is easy to become familiar with normal conditions if doctors will examine their own blood and make a few permanent specimens for comparison.

The differential count is recorded just as we tally votes. The doctor finds a desirable field with the two-thirds objective, where the spread is even and 10 to 40 white corpuscles can be seen. The one sixth objective is focused upon this area and he proceeds to count. A second person tallies. Any one can do the latter. In this way the doctor does not have to remove his eye from the microscope. The glass slide is moved upon the microscope stage and the count continued until a total of 100 white corpuscles are counted and the percentage of the different forms is ascertained. The following is a record of such a count where there was a leucocytosis of 23,000 white corpuscles to the cubic millimeter.

Polynucleated cells	86%
Mononucleated small	8%
Mononucleated large	6%
	100

This count may be repeated several times and the general average taken. It will be observed that the method of counting is exactly the method used in recording votes in an ordinary ballot election. With a little practice the preparation and count can easily be made in 20 minutes, while an expert will do it in half that time. Later, at his leisure, the doctor can prepare and mount the specimen in balsam, thus making it a permanent record.

In the above method no attention is paid to the red corpuscles, but in suspected infection the red corpuscles contribute no information, and with busy doctors and in urgent cases we are often after practical results obtained as quickly as possible. In this case too the eosinophils will be counted with the polynucleated cells, but as the eosinophils constitute but one to three per cent of the white cells, their presence does not modify the practical value of the results obtained.

After making a large number of differential counts in septic cases and also in each case a total count with the Thoma-Zeiss

blood counter the following tabulated results have been obtained:

Normal blood, white cells per cu. mm.

7,000 to 10,000, polynucleated 60-70%

Leucocytosis, white cells per cu. mm.

14,000 to 20,000,	polynucleated	80-85%
20,000 to 30,000,	"	85-90%
30,000 to 40,000,	"	90-95%
40,000 to 50,000,	"	95 +%

The above computation and relation is subject to considerable variation in individual cases. If the differential count shows an increase of the polynucleated cells to 85% the case is critical and as a rule justifies surgical interference. The danger increases with the higher percentages.

If the leucocytosis in sepsis, is due to an increase of the polynucleated cells while the mononucleated cells remain a constant factor, as is maintained by various investigators, the above table may be derived deductively. Assuming the total number of mononucleated cells in normal blood is 3,000 to the cu. mm. (30%) and that this total number remains constant in septic cases the following table is deduced:

Leucocytosis per cu. mm.	Mononucleated white corpuscles per cu. mm.	Polynucleated white corpuscles per cu. mm.	Percentage of polynucleated.
10,000	3,000	7,000	70 %
15,000	3,000	12,000	80 %
20,000	3,000	17,000	85 %
30,000	3,000	27,000	90 %
40,000	3,000	37,000	92½%

A differential count in septic cases is equal if not of higher diagnostic value than a count with the Thoma-Zeiss blood counter. The use of the latter requires considerable skill and consumes so much time that the average busy physician does not use it. The differential count, however, is so easy, so quickly made, so reliable that it should be resorted to in all cases of doubtful septic infection. A little private practice in technic will render any physician efficient in securing reliable data that may be of greatest value in clearing up a doubtful case.

For the benefit of any one who may be interested in the general subject of haematology the following abbreviated list of literature is appended:

Cabot on Examination of the Blood.

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GOLDHORN, L. B., The staining of mast cells and remarks on percentages of mast cells in the human blood. *Y. Y. Uni. Bul. Med. Sc.*, 1902, II, 69.

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MINOT, C. S., Zur Morphologie der Blutkorperchen. *Anat. Anz.*, 1890, V, 601.

MUIR, R., Contributions to the physiology and pathology of the blood. *J. Anat. and Physiol.*, 1891, XXV, 256, 352, 475.

BRONCHOSCOPY FOR THE REMOVAL OF A COLLAR BUTTON FROM THE LUNG.

BY E. FLETCHER INGALS, M. D.

Reported to the Chicago Laryngological and Otological Society March 7, 1905.

On May 23, 1904, Mr. C. D. H. was sent to me by Dr. F. W. Wilcox of Minonk, Ill. He was a man 22 years of age who had formerly weighed 142 pounds but at the time he visited me he only weighed 107½. He told me that 14 months previously he had accidentally drawn a collar button presumably of vegetable ivory into the air passages. He at once felt the sensations caused by it near the upper part of the sternum on a level with the second rib; subsequently he had some

soreness in the same place. He expectorated a little blood a few minutes after the accident and he said that there quickly appeared a peculiar squeak in the breath sounds. Pneumonia developed upon the left side within 24 hours and lasted for one month. He had coughed ever since. He had sometimes felt something moving up and down in the lower portion of the trachea and a valve-like action with choking for a few seconds. The father stated afterward that the patient frequently had these choking attacks coming on without apparent cause and without cough. The last time this sensation had been noticed was four months before he came to see me. He said he had been coughing continuously ever since mostly at night. This was probably due to a change in position of the foreign body. During the summer immediately following the accident, he had had an aggravation of his symptoms with daily fever in the afternoon, during which time he had been kept in bed for a week or two. His recovery from that attack had been very slow. When I first saw him he complained of occasional pain in the left side referred to the second interspace about an inch to the left of the sternum, and occupying an area about two inches in diameter. He had felt no pain in any other portion of the chest excepting low down on the left side at the time he had the attack of pneumonia. His previous history was negative. The heredity was good, there being no tuberculosis upon either side of the family. He was one of twins and reported that his brother was strong and well. He had been much weakened by his prolonged illness, was pale and very anaemic, had dyspnoea upon any exertion, and had some swelling of the feet. The voice was clear. I found the pulse 120, the temperature 99.6, He complained of coughing a good deal, mostly at night, and said that he raised occasionally a thin sputum of a brick dust color, but there were only from two to four drachms daily. There had occasionally been faint traces of blood in the sputum but no distinct signs since immediately after the accident. His appetite was good, but digestion only fair; bowels loose, urine normal. There were no abnormal signs in the nares but the larynx and trachea were moderately congested. We found the haemoglobin only 65%. The sputum contained many pneumococci and pus cells, but no tubercle bacilli. Upon examination of the chest, I found very little movement, with retraction of the left side. The right side an inch below the nipple measured 15¼ to 15½ inches, the left from 14½ to 14¾ inches, but there was no change in the line of dullness on changing the patient's position. The patient said he had been aspirated twice about eight months ago, but no fluid had been found. There was dullness on the left side above the second rib excepting a small area between the first and second and flatness below that level all over the lung. The resonance and respiratory murmur were exaggerated over the right side. The apex of the heart was found in the fourth interspace one-half an inch to the left of the mamillary line. Upon the left side there was broncho-vesicular respiration in the supra clavicular region. From the clavicle to the third rib, the breath sounds were very indistinct, below this they could not be heard at all. The voice sounds were exaggerated above the left clavicle and they were quite distinct as low as the second interspace; but they were somewhat feebler over the remainder of the left lung than over the right side. The vocal fremitus was absent below the third rib. The heart's action was rapid and regular and the sounds were normal. Posteriorly there was marked dullness at the left apex extending an inch and a half below the spine of the scapula with absolute flatness below this line. The resonance and respiratory sounds were exaggerated upon the right side. There was broncho-vesicular breathing at the apex of the left lung, though not very intense. On forcible respiration very often breath sounds could be heard as low as the lower border of the left lung.

Fluroscopic examination showed a dense shadow all over the left side excepting a small area in the infra clavicular region, where the shadow was less marked.

I sent the patient to the Presbyterian Hospital and had a skiagraph made but nothing could be seen, the lung being so dense that

even the ribs did not cast a shadow near the root of the lungs. Three other negatives were taken with similar results. At 5 o'clock in the afternoon of May 23, assisted by several of the internes, I gave the patient chloroform and by upper bronchoscopy attempted to remove the button. Although I had previously given the patient 1-60th of a grain of atropine, there was still abundant secretion in the trachea and a large amount of expectoration. Indeed, he coughed practically all of the time during the operation, which lasted from the time the chloroform was started until I desisted, in all about two hours. During this time he spat up large quantities of bloody pus, which was only kept out of my eyes by placing a pane of glass between my face and the bronchoscope. The pus rendered it very difficult to see and compelled me to swab out the passages almost continuously. After swabbing out the pus I could only get two or three seconds before he would cough again. This seemed to result from the passage of the bronchoscope into an abscess. The patient took the chloroform so badly that we were not able to keep him profoundly under it and I frequently touched the bronchial tubes and the walls of the abscess cavity with a solution of cocaine, but the amount of pus was so great that it had little effect. In the examination of the left lung I was unable to see the numerous branches of the bronchi that are usually apparent, though I followed one of the branches far down until the bronchoscope was introduced its full length, 33 c.m. below the incisor teeth. I searched carefully by inspection, and palpation with a small hooklet, but was unable to locate the foreign body. There was considerable granulation tissue about the bifurcation of the trachea that for some time interfered seriously with the inspection and one mass presented the appearance of a small polypus which nearly filled the bronchoscope. I had not yet been told of the peculiar choking spells and therefore did not have in mind anything of a polypoid nature in that region. The mass that I saw I did not dare to remove, fearing that it might be connected with the bronchus in such a way that I would open through the tube and cause a pneumo-thorax. During the operation a part of the time I used for removing the pus a strip of one-inch gauze which was crowded down the bronchoscope with a large wire, the end of which had been flattened and forked, like that used in the ordinary uterine packer. This worked fairly well, but much of the time I used cotton swabs attached very securely to long brass carriers. At one time in swabbing out the pus the sliding ring for fastening the cotton in the carrier, caught on the end of the bronchoscope and I had a little difficulty in disengaging it. As the swab was withdrawn I examined it and found the swab of cotton intact but it seemed to me a little smaller than the others; however, I concluded that this was due simply to its having become saturated with pus. Some time later I discovered at the end of the bonchoscope a white mass which looked like a large swab of cotton. I grasped this with the forcep and withdrew it, thinking that it must be a pledget of cotton that had been lost off at the time the instrument caught. Not wishing to direct attention to the interne who had been fastening the cotton on the carriers, who by the way was one of the best men in the hospital, I simply called his attention to it by a look and threw it aside without examining it. This mass appeared fully twice as large any of the pledgets of cotton after they had been saturated with the pus, and considering the subsequent history, I am now confident that it consisted of the collar button surrounded with necrosed lung tissue. During the operation the patient's pulse varied from 110 to 150 but all the time was fairly full and regular. Immediately afterward he appeared to be doing well. The next day there was no temperature and the patient said he felt fine. Two days later, he was discharged and went to his home in the country. Two weeks later I received a report that he was improving very rapidly, did not cough excepting a few times in the morning, had a ravenous appetite and had gained 11 pounds. A month later another report stated that he was feeling fine and had gained 22 pounds. Two weeks later

the patient came to see me so changed in appearance that I did not know him. He coughed very little indeed, had no pain, no dyspnoea on exertion, had a ravenous appetite and weighed 130 pounds. An examination of the left chest showed only slight dullness from the second to the sixth rib, showing that the lung had cleared up greatly from the third rib to the sixth; flatness below the sixth rib, otherwise in front and laterally signs over the chest much as at the first examination, excepting that the apex of the heart was found about 1¼ inches to the left of the mammary line. Posteriorly the respiratory sounds were good over the left lung as low as the eighth rib, but feeble or absent below that level. The fluroscope still showed a shadow over the left lung but much less dense than formerly.

In response to a letter the patient called upon me a few days ago (February 20). He said that he had been working 12 hours a day since September, had no cough, no temperature, felt fine, and weighed 136 pounds. Examination of the chest showed very slight diminution of resonance over the left side as low as the sixth rib in front and laterally, and as low as the eighth posteriorly, with a vesicular murmur in the same region about two-thirds as intense as upon the right side. The lung was somewhat contracted and the heart drawn 1½ to 2 inches to the left of its normal position. No respiratory sounds could be heard below the eighth rib posteriorly, probably due to drawing upward of the lung and diaphragm. The normal superficial area of cardiac dullness had disappeared over the right half of the lower part of the sternum on account of the increased activity of the right lung and the dislocation of the heart to the left caused by retraction of the left lung. The patient felt perfectly well and considering the history I feel justified in reporting the operation as a complete success, although I did not at the time examine critically the mass that seemed to have been causing the trouble.

34 Washington Street.

COLLES'S FRACTURE.*

BY E. A. EDLEN, A. B., B. S., M. D., MOLINE, ILL.

The most frequent accident to which the upper extremities of the body are liable is the fracture of the lower end of the radius. The lesion is generally not as simple as it, usually, is described in the text-books on surgery.

The correct idea of its pathology is of utmost importance to satisfactory treatment.

In the typical Colles's fracture, with the classical "Silverfork" deformity, we have a solution of continuity of the lower end of the radius with displacement backward of the distal fragment upon the lower end of the proximal fragment. The initial force is often sufficient to drive the dorsal wall of the upper into the cancellated structure of the lower fragment, producing an impacted fracture.

It is evident from the features of the deformity that the injury is not only a fracture of the radius, but also a dislocation of the lower end of the ulna, and sometimes fracture of its styloid process.

The general disturbance of the various tissues at the seat of the fracture and at the wrist joint is of great importance and should be always kept in mind.

The deep fascia passing down the forearm and over the wrist forms the annular ligament which surrounds the tendons passing to the hand and fingers. Into those sheaths, formed by the annular ligament, will be an exudation of lymph which tend to interfere with the action of the tendons and, if not overcome, will result in stiffness of the wrist joint and fingers.

The styloid process of the dislocated ulna is sometimes hooked into fibers of this ligament. Intimately connected to this ligament are the two lateral ligaments, the internal and the external. The external secures the styloid process of the radius and the scaphoid together and is prolonged to the annular ligament. The internal passes from the styloid process of the ulna in two fasiculi to the cuneiform and the pisiform bone and the annular ligament. This ligament is often torn in Colle's fracture.

The exterior carpi ulnaris, passing through the annular ligament between the head of the ulna and its styloid process, fre-

*Read before the Moline City Hospital staff December 6, 1904.

quently becomes dislocated and favors an entanglement of the styloid process of the ulna in the annular ligament.

Anteriorly, protecting the wrist joint, we have the broad membranous band consisting of three fasiculi, attached above to anterior margin of the lower end of the radius, its styloid process and the ulna, below to the palmar surface of the scaphoid, and cuneiform bones. This strong ligament is more or less torn or injured. The posterior ligament secures the lower end of the radius to the bones just enumerated.

It will be remembered that the ulna does not articulate directly with the carpus. Between them is placed the triangular fibrecartilage. This cartilage is sometimes torn from its place, or is otherwise more or less injured. The proximity of the fracture to the wrist joint, with its extension synovial membrane, favors great exudation about the seat of the injury.

Furthermore, we have to take into consideration the liability of disturbance of the lower radio-ulnar articulation. The periosteum is torn and occasionally displaced.

Fracture of the lower end of the radius is sometimes attended with little or no displacement of the fragments. In such cases there is insignificant injury produced on the surrounding tissue, and the treatment is quite simple and satisfactory results is the rule.

With the above clinical features before us, it is quite evident that we have a complicated affair to deal with, and that the treatment must necessarily be directed toward the restoration of the normal relation and the ultimate recovery of the various tissues at and about the seat of the injury.

The main points in the treatment are: 1, Reduction; 2, Fixation; 3, After-treatment.

1. Reduction of Colles's fracture is sometimes not the easiest thing.

However, if we bear in mind the cause producing the injury, it will simplify the mode of reduction. The cause is generally the weight of the body on the hand in extreme extension produced by a fall. In the reposition of the fragments the opposite forces have to be employed. In case it is deemed desirable anaesthesia should be used. The surgeon should grasp the hand firmly, with the thumb pressing gently upon the displaced lower fragment. The other hand should encircle the wrist, with the thumb on the radius directly above the fracture. An assistant should hold the elbow firmly. Traction and adduction should then be made in order to release the impacted fragment. Press firmly with the thumb on the lower fragment and at the same time flex the hand, when the fragments are released bring them into perfect apposition by careful manipulation with both hands.

This will generally reduce the fracture. If this will not accomplish the object in view, place the hand backward in extreme extension with adduction and traction, which will loosen the impaction, and a reduction will then be made by the described method. Having reduced the fracture of the radius, the reduction of the dislocation of the ulna should be accomplished, if not already effected during the correction of the radial deformity. First make traction and carry the hand as far backward as possible and to the radial side in order to release the styloid process from its entanglement in the annular ligament. Then replace the tendon of the extensor carpi ulnaris, if displaced, by swinging the hand from its backward position to the ulnar side and complete the circumduction by placing the hand in the position of flexion. During the manipulation the thumb of the opposite hand of the surgeon should be placed against the lower end of the head of the ulna and pressure should be made to force the bone upward and into place and secure at the same time the return of the extensor carpi ulnaris tendon to its proper position. Palpation and careful scrutiny after the reduction should always form a part of the surgeon's procedure in order to satisfy himself that the normal relations of various parts exist before the splints are applied.

2. Fixation after reduction is not an absolute necessity, because there is very little liability of disturbance of the fragments, if the reduction is complete. According to Roberts of Philadelphia, the displacement is the result, not of muscular action but of the

vulnerating force, and the muscular surroundings have little to do with the causation or continuance of the distortion. This is undoubtedly a true statement. Nevertheless, it would be unwise to follow Hutchinson's advice, not to use any splints at all. It may do in large hospitals, but in private practice it would be the best means of inviting malpractice suits. In the idea of the average layman or lawyer, it would be preposterous and criminal. Besides, the rest and comfort given the injured parts by well fitting splints during the repair is of great importance.

I generally use two splints during the first week, the material used depends on what is within easy reach. The splints are manufactured on the spot. I generally use card board; three layers make it strong enough and at the same time light. I cut the splints to conform to the width of the forearm, wrist and hand and make them long enough to reach to the metacarpo-phalangeal joints. On the palmar splint an ellipical cut is made to fit the eminence on the thumb. The splints are padded with cotton to conform to the normal curvatures of the wrist and hand, and a roller bandage is applied to keep the padding in place. The splints are then secured, the hand placed in semipronation, with strips of adhesion plaster, and the dressing is completed by applying a two and a half inch muslin roller bandage, in such a way that the thumb and fingers are left free. The forearm is then put in a suitable sling. It is not good practice to immobilize the fingers, as there is a great liability to stiffness, if motion is entirely inhibited. The plaster of Paris fixation, in vogue a few years ago, is not to be recommended, as it is liable to produce an undue amount of stiffness on account of the immobilization of the joint for too long a time.

3. The after-treatment is of equal importance in the final result. Passive movements of the fingers should be practiced from the first day. In about five days the splints should be removed and gentle massage applied and passive movements of the wrist joint. Massage will greatly facilitate the removal of the inflammatory product and will assist nature in its work. The splints ought to be removed every other day for massage. I generally remove one of the splints altogether about the tenth day and in fifteen or twenty days both splints are discarded. If any swelling exists after that time I apply massage once a day, until the inflammatory products have been removed and the functional activity of the injured parts is restored. The length of time to bring this about is dependent on the extent of the injury and the vital activity of the patient. With this treatment a favorable result is the rule and a very little stiffness of the fingers and wrist joint is left after the second month.

HOSPITAL FACES A STRIKE.

Elgin Physicians Resent Presence of an Osteopath at the Sherman Institution.

Elgin, Ill., April 26.—[Special.]—Elgin Sherman hospital, the only institution of this character in the state which is managed and operated entirely by women, is threatened with resignation from every physician now upon the medical staff.

Two days ago, Dr. Murray, an osteopathic doctor, was given the privilege to bring his patients to the hospital. The regular practitioners look upon this act as an affront to the entire medical fraternity. At a meeting of the local medical association several of the hospital staff announced that if Dr. Murray is not removed they will resign.

A meeting of the board of lady managers has been called for tomorrow afternoon. The doctors have withheld their resignations until tomorrow night, but at that time drastic action will be taken unless the affair is adjusted.

Golden Jubilee of Frederick Stearns.

To engage for 50 years in one business is given to few men and on this account the celebration of this anniversary by the old and reliable firm of Stearns & Co. deserves special mention. The New Idea, the Journal of this firm, in the recent issue details the facts of this history in a very entertaining manner. We congratulate the members of the firm and hope and predict many more years of usefulness and success.

Easy Cures.

Dr. Dosem—"To what does Dr. Cutter owe his immense success?"

Dr. Bleedham—"He confines himself entirely to office practice."

Dr. Dosem—"Well, I don't see—"

Dr. Bleedham—"People who are able to walk into the office aren't sick—they just think they are."—Cleveland Leader.

Chicago Medical Society.

The Medical Society of Cook County, Regular meetings are held every Wednesday evening from October to June at the Chicago Public Library Building, Randolph Street Entrance in the large hall on the ground floor toward West end of the Building. Membership 1512.

OFFICERS:

J. B. MURPHY, 100 State Street ..... President
FRANK X. WALLS, 4307 Ellis Avenue ..... Secretary
A. E. HALSTEAD, 2937 Indiana Avenue ..... Treasurer
W. A. EVANS, 103 State Street ..... Chairman Medicolegal Committee
WM. HARSHA, 103 State Street ..... Chairman Membership Committee

MAY, 1905.

A regular meeting was held Wednesday evening, March 8, 1905, with Dr. Jacob Frank in the chair.

Minutes of the previous meeting were read and approved.

1. Dr. Rosalie M. Ladova read a paper entitled "A Case of Aortic Insufficiency."

2. Dr. D. N. Eisendrath showed and reported the following cases:

1. Case of General Blastomycosis.
2. Three cases of Diffuse Septic Peritonitis following Appendicitis.
3. Hodgkin's Disease.
4. Case illustrating the use of Wolf Skin Grafts.
5. Case of Encapsulated Tubercular Peritonitis.
6. Non-Development of the Testes.

The cases were discussed by Drs. Frank Hugh Montgomery, W. S. Harpole, Oliver S. Ormsby, E. J. Senn, C. O. Young, Carl Beck, and the discussion closed by Dr. Eisendrath.

3. Dr. Rudolph W. Holmes offered the following resolution, which was unanimously adopted, and the secretary requested to forward a copy of the same to the family:

Resolutions on the Death of Dr. Walter Christopher.

The Chicago Medical Society desires to express the sense of the deep loss to the profession and country by the death of the late Dr. Walter S. Christopher, and extends to the family its deepest sympathy.

Resolved, that these sentiments be spread upon the minutes of the Society, and that a copy of the resolution be sent to the family.

4. Dr. Jacob Frank read a paper entitled "A Report of Two Cases of Complete Perineal Prostatectomy by Young's Technique."

See page 443, this number.

5. Dr. James B. Robb read a paper entitled "An Unusually Large Aneurysm of the Abdominal Aorta."

Adjourned.

ABSTRACT.

A Case of Aortic Insufficiency.

By Rosalie M. Ladova, B. S., M. D.
Clinical Assistant and Instructor, Chest, Nose and Throat, Rush Medical College, affiliated with the University of Chicago.

Mrs. W. S., American, age 52, housewife. Family history negative.

Personal history: At the time of the civil war patient sought medical advice for attacks of dyspnoea and was then informed of a heart lesion. Had recurring attacks of dyspnoea, but had no medical attendance till January, 1903, when attacks increased in severity and oedema of lower extremities reached till above the knees. Recovery followed and she was without medical supervision again till Jan. 6, 1904, when I saw her for the first time. I found her in a state of extreme dyspnoea and cyanosis, with a pulseless wrist and subnormal temperature; restlessly tossing herself in a vain effort to get her breath, with a look of despair in her eyes, she was a picture of distress. For the stertorous respiration the heart sound was inaudible, the cardiac impulse could not be felt.

Under stimulation and use of morphia she rallied and was much improved; the attacks recurred on 10th and the 11th. She became unconscious and delirious, while her pulse responded to stimulation, her mental state remained the same and she died in the evening of the 11th.

Contrary to instructions, she was fed fermented preserved peaches and corn starch pudding, which undoubtedly precipitated the end.

Physical findings: Pulsation in the carotid and thyroid arteries, throbbing in the superficial veins of the neck, cardiac impulse diffuse, pulse 76, not of the water hammer variety; T. 94.4; R. 26; apex at the sixth interspace in the nipple line; only a moderate degree of arterio-sclerosis, heart dullness from the third rib to sixth interspace in the nipple line, one inch to the right of the sternum; lower border about two fingers

breadth below the costal arch. Moist mucous rales in posterior lobes; diastolic murmur at the aortic area, heard all over the precardia, transmitted down the right border of the sternum; round ulcer on the anterior surface of the thigh.

Urine showed a trace of albumen, otherwise normal. Pathological diagnosis, post mortem: Insufficientia valvulae aortae, hypertrophia cordis; atheromatosis aortae; emphysema pulmonum; oedema pulmonum; hydrothorax dextro; concretio pulmonis sinistrae curu pleurae parietalis; hydropercardium; infarctus hemorrhagicus pulmonis dextrae, tuberculosis obsoleta apicis sinistrae; morbus Bright's chronicus; hyperemia mechanica hepatis et liennis; myomato arteri; pelveo-peritonitis obsoleta; hydrops ascites; gastritis chronica; epithelioma cruris dextrae; anasarca et marasmus universalis.

The clinical interest in this case centers in the almost miraculous recovery, in view of the post mortem findings, from an extremely severe attack of angina pectoris and impending paralysis of the heart and the probable further improvement, frustrated by a dietetic error. Other unusual features: Diffuse transmission of the murmur within the precordia and its limited transmission outside of the same; pulse not intermittent and not of the water-hammer variety, quickly responding to stimulation; impaired temperature sense, etiology, outside of only a moderate arterio-sclerosis, lacking. This lesion is rare in females. Of 53 cases collected by Babcock, only 7 in females; urine normal with a distinct renal lesion; extreme multiplicity of post mortem findings.

My thanks are due to Dr. Heliodor Schiller for his kind assistance in the post mortem examination.

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General Blastomycosis.

I will point out the principal features of this case and ask the members to examine the patient. Beautiful examples of the organisms were obtained from the ulcer on the patient's leg by Dr. Ormsby. The diagnosis has been confirmed both by the microscope and by the organisms found by a number of eminent dermatologists of this city. The patient was examined this afternoon by Dr. Montgomery, who, with Dr. Hyde, has published fourteen cases of this disease. I have placed by the side of the patient the monograph of Drs. Hyde and Montgomery which contains beautiful illustrations of this disease. The disease is known as blastomycetic dermatitis. Those two photographs which I will pass around are fairly good ones illustrating the lesions.

The disease was first brought to our attention some seven or eight years ago by Gilchrist, and since then there have been quite a number of cases recognized. It is characterized clinically generally by one lesion, or by more or less general infection as this patient shows. It is characterized locally by the fact that the edges of the lesions are raised, sharply demarcated from the surrounding normal skin. These edges contain a number of small miliary abscesses. Another characteristic of the surface is fairly well shown in this case, but not so well as it was two or three days ago, that is, a peculiar wart-like or papillomatous condition of the ulcer. It was upon this, even without a microscopic examination, that the diagnosis was made, and the patient brought to the Cook County Hospital. I believe, and Dr. Montgomery and others have agreed with me, that we are dealing here with one of the rarer cases of general infection by the blastomyces. We are beginning to know something about the pathogenicity of the yeast-like organisms that produce pus and general infection, and often causing death through cachexia. You can see the inroads the disease has made upon the general condition of this man. He is a Bohemian, 40 years of age, and first noticed a small, circumscribed abscess which appeared upon the left side of the chest. Following the abscess on the left side of the chest, which healed after using medicine, he noticed an ulcer forming upon the place where the largest ulcer exists at the present time—the posterior surface of the right limb. This was gradually enlarged until it attained its present size. He has an ulcer of the typical blastomycetic type on the left heel and two on the right leg, one of which is large. He has an abscess that formed spontaneously upon the anterior aspect of the right elbow; and some characteristic warty excrescences covered by some crusts under his chin.

As regards the differential diagnosis of the disease, it is to be distinguished from tuberculosis verrucosa cutis, from carcinoma and syphilis, and the only question would be in regard to the serpiginous type of syphilis.

It is much more difficult to differentiate this disease from carcinoma. We have the enlarged hard lymphatics and the disease spreads much more rapidly in carcinoma. I believe it is of one years duration in this case, and is not spreading rapidly.

The differentiation of blastomycosis from tuberculosis is difficult. The only way the diagnosis can be made from tuberculosis of the skin is the fact that tuberculosis seldom appears on the face. I refer to tuberculosis verrucosa. Tuberculosis does not present the characteristic softening of miliary abscesses along the edge. Tuberculosis is not apt to spread quite as rapidly as this disease, but much more slowly. Another characteristic is the finding of the typical organisms, the yeast cells of blastomyces in the miliary abscesses.

Diffuse Septic Peritonitis Following Appendicitis

I wish to present three patients illustrating the progress we are making in the treatment of diffuse septic peritonitis complicating appendicitis, who were operated upon on an average of between thirty-four or seventy-two hours after the onset of the disease. In two of the cases perforation occurred into the free peritoneal cavity. In one there was no perforation of the appendix, but it was a virulent type of appendicitis which is generally recognized as streptococcic, and which we have looked upon as a hopeless type, with general invasion of the peritoneum. I do not mean a type of peritonitis in which we have a little pus scattered around

the appendix, or where there is partially walled off abscess cavity, where we take out the appendix, but a diffuse septic peritonitis, the pus being diffused everywhere over the free peritoneal cavity. The intestines in these cases were bathed in pus as high up as we could reach, almost up in the region of the liver and diaphragm, with liquid pus and fibrinoplastic material thrown out. In one case the condition was purulent; in others we had to deal with a milky, turbid sera. We could not have saved these patients five years ago with the methods then in vogue. We have to thank one man for improving our percentage of recoveries in these cases—Dr. Fowler, of Brooklyn. Dr. Fowler, in 1900, published a paper in which he recommended the Fowler position in connection with operations for diffuse septic peritonitis. Undoubtedly most of you are familiar with it. He also recommended flushing these cases freely with salt solution, putting in drains, and, instead of letting the patients lie flat on their backs, to prop them up in bed or to elevate the head of the bed, the object being that the pus will not gravitate towards the diaphragm where the large lymphatics are but toward the palvis and by inserting drains in the pelvis we can get rid of the pus quicker than in any other way.

I desire to pass around photographs of a little apparatus we are using in the Michael Reese Hospital, which was suggested by one of our head nurses. It is designed for use in this work instead of using a saw-horse, chairs, tables, or anything of that sort. This photograph shows the elevation of the head of the bed. These three patients were treated practically the same. We did not know before I operated on two of the cases that the peritonitis was diffuse. I did not think the infection had extended beyond the appendix. I made the usual incision for appendicitis in these two, but had to enlarge it. In a third case I made a diagnosis of appendicitis before operating, and made the incision in the median line. The best practice is, in cases where a median incision is made, not to eviscerate, because this adds more or less shock. I took a long nozzle, used one of the larger tubes, and flushed it between the different coils of intestines as much as I could. I used three or four gallons of salt solution in each case. After washing and sponging it out, leaving some fluid in the peritoneal cavity, I inserted a drain towards the pelvis in all cases, in one a Mikulicz drain. Two of the cases were treated with glass drainage tubes plus a Mikulicz drain. Nowadays surgeons have different opinions in regard to the drainage of these cases. Recently at a meeting of the Chicago Surgical Society, Dr. Van Buren Knott read a paper on this subject, which was discussed by men of considerable experience, and the opinion was expressed by some that a drainage tube with gauze inside of it was preferable to other forms of drain. I have reason to believe that a Mikulicz drain, with gauze used inside of it, and which is gradually removed after twenty-four to forty-eight hours, and other gauze substituted, is one of the best drains we can use for that purpose.

The Fowler position was used systematically in these three cases. I believe elevating the head of the bed is preferable to putting patients who have been operated upon in bed and propping them up with chairs or pillows. By elevating the head of the bed we can keep them in a fixed position at an angle of forty-five degrees. The method we have used in two of these cases and has been followed by excellent results, is giving these patients continuously salt solution per rectum after operation. That was accomplished in this way: We introduced a small catheter into the rectum, and put an irrigator next to the patient, which was elevated a foot or more above the level of the bed, and we had a pinch-cock arranged so that a few drops of salt solution kept on flowing all the time. It is really wonderful the amount of absorption that will take place by the continuous pouring-in of salt solution, and it is very advantageous over the older method of giving these patients salt solution every four hours.

I will briefly speak of the results of Fowler, who says that in former times, under the old methods of treatment, seventy-five patients out of every hundred died from general peritonitis, with appendicitis, up to the year 1900. Drs. R. S. and G. R. Fowler have managed to save 67 cases out of 100. You will readily see that this is an enormous improvement in our mortality. Dr. Van Buren Knott reported 19 cases upon which he had operated for diffuse septic peritonitis, with seventeen recoveries.

The case of this little girl is of special interest. After the operation she had a good many colics, and it looked as though we were going to have post-operative intestinal obstruction, and the only way we succeeded in getting constant bowel movements was to give large doses of magnesia sulphate and cascara daily.

Here is another case, that of a woman of 35, in which there were complications. She had a diffuse septic peritonitis complicating an appendicitis in about a week after the operation. She had a temperature of 102°, with a leucocyte count of 20,000. It looked as though there was a circumscribed abscess somewhere encapsulated between the coils of the intestines. I decided to go in again, but after waiting twenty-four to forty-eight hours, and keeping up catharsis, the temperature dropped again. Such symptoms often indicate the formation of localized abscesses between the adherent coils of intestines.

The third case had a post-operative hernia with adherent intestine so small that it was necessary to operate and resect a portion of the intestine last summer, which we did, and obtained a good result. The whole peritoneal cavity was practically obliterated by adhesions.

Hodgkin's Disease.

This young man shows a well-marked case of Hodgkin's disease. The patient was referred to me by Dr. Ballenger, and I have asked him to begin X-ray treatment for this disease. It is a marked case of Hodgkin's disease, with extensive cervical gland involvement. The patient is twenty years of age, yet the disease is so marked that it has involved to a great extent the cervical and axillary glands.

He began the daily use of the X-ray two weeks ago and the mass on the right side has decreased at least one-third.

Skin Grafting by the Wolf Method.

The next case illustrates a comparatively new method of skin grafting, and I thought it would be of interest to show you this case before all of the parts have healed. In two places on which skin grafts were used healing has taken place, and the others will be practically healed in a short time. The method can best be shown by passing around some photographs taken before the grafts were used.

This young man, last September, while attending to a press-feeder, caught his hand in a sheet of paper which passed in between two rolls, sustaining a compound fracture of one of the phalanges, and extensive crushing of the fingers opening the flexor tendon sheaths that I was in doubt whether to amputate or not. She was taken to the West Side Hospital, the hand was cleaned thoroughly, removing all grease and dirt from it, and to make the description of the case short, I will say that we secured primary union, as far as we could, with excessive scar tissue. Following the operation, on account of the adhesion of the tendon to the scars, the hand was very much contracted, so that it was practically useless. I knew the lengthening of the tendons was not practicable, and that breaking up the adhesions of the joints and cutting the tendons would not do any good. I finally suggested to her that she permit me to anesthetize her and cut the scar tissues where the tendons were adherent to it. The tendon sheaths were destroyed by the original accident. We put on a form of graft known as the Wolf or Krause graft, which differs from the Thiersch skin graft, and from the pedunculated graft which we sometimes use, where we graft from the abdomen. In this case I took two large pieces of skin from the abdominal skin and trimmed off only the subcutaneous fat. The advantage of this method is that you can apply the grafts accurately. You will notice the amount of extension of the fingers which she now has. She has good motion, and in a short time, with exercise by means of a rubber ball, we hope to improve this much more than it is. I will pass around some photographs showing the condition of the hand before operation, and also when the grafts were taken.

Those who have not resorted to this method of skin grafting will at first think that everything is going to be a failure, and that every graft is going to slough. But that is not the case, and it is largely the reason why I brought the case here to exhibit.

Case of Encapsulated Tubercular Peritonitis.

This young man came to me with a history of what was considered by a physician in Indianapolis as an attack of appendicitis, with pain in the right iliac region. When I saw him he had a tumor which projected to the right of the umbilicus. It was soft and fluctuating. Apparently one could reduce it completely. The case was diagnosed by an excellent internist, and I thought it was the same thing when I saw him, as a hydronephrosis. The tumor seemed to disappear upon pressure from the renal region. Then I changed my diagnosis, and thought it was a mesenteric cyst. There was apparently tympany in the area above the tumor. When I operated I found it was an abcess cavity which extended from the level of the iliac region away up. He had no temperature; no leucocytosis. This condition has been going on for four months. When I found the upper level of the diaphragm, and went over as far to the right as the median line and downwards to the pelvis, it was an encapsulated tubercular peritonitis, the microscope showing giant cells and typical tubercle bacilli.

Non-Development of the Testes Causing Infantilism.

The next case is not mentioned on the program. I am going to ask the members to examine this young man. It is a rare case. The patient was referred to me originally by Dr. M. B. Sincere, of this city. There are some interesting features connected with the case. Every organ has its internal secretion and when the testes are not developed, there is something lacking in the male organism. He is thirty years of age, and well developed so far as the bones go. If you will look at him carefully you will see that his fat is like that of an infant, as is also the skin. There is no hair on the genitalia, and the parts look like those of a child of five or six. If you will palpate the scrotum, you will find that both testes are present, but very atrophic. They are scarcely larger than small marbles. This is not a case of infantilism from non-descent of the testes, but simply one due to non-development of them.

Dr. E. J. Senn: I would like to say a word or two in connection with what Dr. Eisendrath has said concerning diffuse septic peritonitis. I do not think we should allow such an assertion as he has made to go unchallenged. I have never seen a case of general diffuse septic peritonitis recover, and I have seen quite a number of them, especially when we consider appendix operations. The incision that is made for the ordinary appendix operation does not allow free inspection. In the suppurative cases this incision is made somewhat larger. The rule at the present time is to make the muscle-splitting, gridiron incision ,and I would like to know what proof Dr. Eisendrath has for calling these cases general diffuse septic peritonitis. He has not explored the entire abdomen. I have seen time and again coils of intestine present themselves in the wound, making one think that he was in the general peritoneal cavity, but by making a careful examination we will find that this is not the case, as I have noticed in one particular instance of traumatic rupture of the intestine. In this case, when I first made the incision, I was certain that I had to deal with a diffuse general peritonitis. But upon more careful examination I found in the upper left quadrant of the abdomen a considerable area of non-infected peritoneum, covered by spider-web adhesions. So I do not think we can allow such an assertion as this to go into print without proof. Almost ever case of diffuse septic streptococcic

peritonitis is demonstrated on the post-mortem table. We must consider this subject from a pathological standpoint. The very fact that Dr. Eisendrath got a considerable amount of sero-purulent pus, and stated that there was considerable fibrinoplastic material present, shows that the infecting organism was not of a very septic nature. In all cases in which we have streptococcus infection we do not find any inflammatory product, and the very fact that we do not find an inflammatory product proves its septic nature. In many cases of infection of the peritoneum, due to perforative peritonitis, the lives of the patients are destroyed before there are any inflammatory products involving the peritoneum. In other words, the patients often die of general sepsis without even a perceptible peritonitis. The streptococcus finds its natural habitat in the lymphatic system, and the toxins there soon destroy the life of the patient.

Dr. Eisendrath has not stated whether any one of these cases was streptococcus infection. I hardly think it is possible that there could have been such an infection.

We must be careful in making an incision in the right quadrant of the abdomen. I have observed many times, when surgeons have claimed to have had cases of diffuse septic peritonitis recover, that there were no proofs furnished to that effect. While I believe there may have been a suppurative peritonitis in these cases, they should be called cases of diffuse general septic peritonitis.

As regards the new treatment of placing the patient in a dependent position (Fowler), that is very well. We know that the stomata in the diaphragmatic portion of the peritoneum rapidly absorbs inflammatory products.

Dr. W. S. Harpole: I would like to ask Dr. Eisendrath or Dr. Montgomery a question in regard to this subject. They seem to consider it sufficient to make a diagnosis to find the blastomyces, and they do not say anything about searching the tissues for tubercle bacilli. I would like to ask Dr. Eisendrath whether the tissues in this case have been searched for tubercle bacilli?

A few years ago, in reading a paper by Drs. Hyde and Montgomery on this disease, published in the British Journal of Dermatology, I looked over the report of the pathologist very carefully, in an examination of the tissues, for an effort to exclude histological tuberculosis. But no mention of such a search was made. Possibly every case they are reporting now is being searched carefully for tubercle bacilli.

My reason for asking this question is this, that on a previous occasion in a case of blastomycetic dermatitis, which was recognized and pronounced such by a number of pathologists, proved to have tubercle bacilli in the tissues. I stained for them, and found them, and these findings were confirmed by Dr. Futterer, who saw them with me.

Dr. C. O. Young: I was extremely interested in the cases of diffuse septic peritonitis reported by Dr. Eisendrath, since I had the misfortune to lose such a case two days ago from this disease. I operated in the usual way, put in a drain, and did nothing more except to place the patient in the sitting position and give salt solution in the manner described. I will say, however, that my patient was in a desperate condition before the operation, and I am interested to know in what condition Dr. Eisendrath's patients were prior to operation. I believe we have come to the stage in the treatment of these cases when we should be honest with each other and be thorough in the description of our cases. There are surgeons making statements now to the effect that they get a very low mortality in cases of general suppurative peritonitis, caused by appendicitis, and there are others who claim that they get nothing but mortality. In other words, their cases all die. We younger surgeons are meeting with this latter experience, and we would like to know which is the truth.

So far as flushing out the peritoneal cavity with normal salt solution is concerned, I believe it has very little influence upon the progress of the case. This method has been tried and has been discarded. If we do any good in these cases, it would seem to me to be due to the fact that we open up and let out the pus; in other words, take off the pressure as we do in cases of other abcesses, and the less we do besides that the better the patient is off. We should not make the removal of the appendix our object at this stage. If we do as little as possible, simply opening up and inserting a drain, we are more likely to get a good result than by adopting more radical measures.

Dr. Carl Beck: I would like to ask Dr. Eisendrath whether he has examined any of the removed pieces of grafts, and whether they did not contain the whole thickness of the epidermis, leaving more or less subcutaneous tissue on the surface, so that the remnant of the Wolf graft is nothing but a keloid after a while.

I have repeatedly used Wolf grafts, and I have found them in the majority of cases to be inferior to the pedunculated flaps, so that I can say that pedunculated flaps are to be recommended, the Wolf grafts usually becoming necrotic on the surface, and leaving nothing but keloid tissue. After examining this case I can see very little of the epidermal surface left on the grafts. I am pretty sure that in time the epidermis will become atrophied. Under the microscopic we can see nothing but fibrous material taking place, which naturally is soft, and after a time these tissues will become atrophied. While I believe the function of the fingers will be good, because the injury was not over a joint surface, but between the joint and not very deep, the result of the grafting will be about the same as if there had been plain cicatrization. The cicatrix, after a while, will also become movable, and with a certain amount of orthopedic treatment we may get considerable movement of the cicatrix, and also good function.

Dr. Eisendrath (closing the discussion): I am very glad to get Dr. Beck's opinion in regard to the case in which I resorted to skin grafting. I debated in this particular case for, at least, five or ten minutes as to whether I should use

pendunculated grafts, but decided in favor of Wolf skin grafting, for the reason I had four surfaces, each one of which was about one-quarter of an inch wide by an inch long, and if I took peductulated grafts, I would later on have to cut the flap to correspond to the space of the fingers, and that would probably take a much longer time, and I would not get as good a result as if I took four pieces large enough originally to fill up the corresponding gap. That is the reason I decided to try a Wolf graft in this particular case.

I did not examine the portion which sloughed off, because I thought it was simply necrotic tissue. I have been watching the case with interest from week to week, and in between the granulation tissue one can see distinct islands adjoining each other of epidermis, and this lower portion, I am confident, is not keloid, because I saw it after the necrotic portion had sloughed off. The only way we can tell absolutely would be to make an incision. It is not keloid tissue that she has over the second finger, but epidermis. So far as the functional result is concerned, I believe it is fifty per cent better now than it was before the operation, and in time, with orthopedic treatment, and by means of apparatus, she will be enabled to use these fingers freely.

In reply to Dr. Harpole's question, I have the superior experience of Drs. Montgomery, Ormsby and Hyde in this particular direction. This is the second case I have had of blastomycetic dermatitis. My first was the fifth case ever published in America, published by Dr. Owens and Mr. Ready, and myself.

As to the histo-pathology to which Dr. Harpole referred, the presence of giant cells in the infiltrated areas of the corium resembling tuberculosis, etc., we know that giant cells can occur in syphilis and other diseases besides tuberculosis, so there is no reason why, in such a chronic inflammatory condition as this is, giant cells should not occur. Dr. Harpole no doubt knows that it is difficult to demonstrate tubercle bacilli in the tissues. As Drs. Ormsby and Montgomery have said, we may have to stain hundreds of section before we are able to find a tubercle bacillus. The only positive way to differentiate this disease and tuberculosis would be the inoculation test, which has not been carried out in this case.

With reference to Dr. Senn's pessimistic views on diffuse septic peritonitis, I can only say that he will have to modify his methods, as we are progressing rapidly with the treatment of diffuse septic peritonitis. Furthermore, I wish to say, those who have seen cases of septic peritonitis will not be disappointed after trying this treatment.

In regards to what I mean by a diffuse septic peritonitis, that depends on our knowledge of surgical pathology. Personally, what I call septic diffuse peritonitis is this: That the pus is free over the entire abdomen. I did not open the abdomen in any of these cases through a McBurney incision, but used a straight incision, going through the muscles in a straight line. In two of the cases I opened in the appendiceal region, but I gained a view of the whole peritoneal cavity. In the third case which I opened in the median line, the abdominal walls were so well retracted that every one of the coils of intestine was eviscerated, covered with fibrinoplastic lymph. This does not mean that the abdominal cavity need necessarily be obliterated, but means a different form of infection, so that if we have free fluid with fibrinoplastic lymph, it means a less virulent infection. In the case of the young girl there was an immense quantity of fluid between every coil of intestine. This was the only case of the three I eviscerated. I do not recommend this practice, because it adds greatly to shock. I was very anxious to save this patient, as she had a pulse of 152 at the time of the operation. The case loked like an absolutely hopeless one, and I told the parents so at the time of the operation, saying that there was one chance in a thousand, but that I would make every effort possible to save her. This is what I call diffuse septic peritonitis, when one with the naked eye can see every coil of intestine bathed in pus. We found it in the lumbar region; we found free pus in the pelvis wherever I could reach. Of course, through an incision of this kind we cannot reach the subphrenic spaces. This is out of the question. If one wants to be absolutely and technically correct, in useing the term diffuse septic peritonitis, we should never use it except when those spaces are involved.

In one case I had occasion to operate for a threatening intestinal obstruction from post-operative hernia about six months after the original operation. I found adhesions between every coil of intestine wherever I looked in the abdominal cavity. It was not safe in this case to do an intestinal resection, on account of adhesions, and to use the Murphy button; I had to use the suture method. Diffuse septic peritonitis means, so far as the eye can see, the involvement of nine-tenths of the peritoneal cavity with pus, and following it we have diffuse adhesions. One of these patients passed through one attack of diffuse septic peritonitis without operation four years ago, but it was a stormy time for her. She was ill for six months. In the second atack she said she would never go through it again without an operation, and insisted upon an operation being performed within forty-eight hours from the onset. It was a cure where I could not get into the general peritoneal cavity without going through the omentum. The omentum was adherent to the pelvic viscera. I found the intestines agglutinated to each other.

In answer to the question of Dr. Young as to the condition of these patients prior to operation, they showed clinically the typical signs of peritonitis. The pulse ranged in none of them less than 130. There was diffuse tenderness and rigidity of the abdomen in every case.

I think the results of these three cases are encouraging, and I am sure, from my experience, in having had these successful results, I shall go on using the same treatment.

Dr. Frank Hugh Montgomery. The case of blastomycosis exhibited by Dr. Eisendrath should

be of interest to all practicing physicians, since, in addition to the extensive cutaneous lesions, there is probably systematic infection. It is of special interest to those of us who have been working in this field for a number of years in an endeavor to demonstrate to the dermatologists, pathologists and the profession in general that the disease has a distinct clinical and pathological entity. Cutaneous blastomycosis is now generally recognized, cases having been reported in different parts of this country and also in several cities in Europe, though for some unexplained reason the majority of all cases reported have been from Chicago and its vicinity.

In the monograph, referred to by Dr. Eisendrath, Dr. Hyde and I reported 14 cases of our own. Since that time we have had under our care about a dozen new cases and have seen as many more in the practice of other physicians. Most of these new cases have not yet been published.

While the possibility of systematic blastomycosis has been recognized for several years and a few cases reported, even those who are most familiar with the subject have not believed that the systemic infection would be common enough to be of great interest to the profession at large until recently when the number of systemic cases has increased sufficiently to warrant us in the belief that the subject will soon be of a live and practical interest to every general practitioner.

The systematic case which was worked up so thoroughly and reported by Drs. Ormsby and Miller demonstrated clearly the ease with which cases of this disease could be allowed to pass for tuberculosis, and the necessity therefore of the practitioner being informed on the subject. A systematic case was reported recently before this society by Dr. Cleary. There are in this city and adjoining towns 4 or 5 recognized cases of systematic blastomycosis and at least two others in which the patients are dying from what will probably prove at the autopsy to be systemic blastomycosis. This case of Dr. Eisendrath is in all probability one of systemic infection, as we found this afternoon typical organisms in the pus from an abscess which had formed spontaneously beneath the skin.

These systemic cases are as yet too few in number to permit a distinct classification or conclusion with reference to their symptom complex. In the cases that have been studied post-mortem, the lungs, liver, spleen, kidneys and other organs have been involved. The symptoms consequently may point to any one of these organs or to all of them. A feature which is common in all these cases is, that while they simulate tuberculosis, pneumonia, nephritis or other recognized disease, the course is somewhat atypical and not that which usually seen in the suggested disorder. The disease with which blastomycosis may be most easily confounded is tuberculosis, with which it has not only many symptoms in common, but also the gross pathology of the two diseases is very much alike, and distinction in some cases would be difficult or even impossible without careful microscopic and bacteriological examination. Systemic infection may follow a long period of cutaneous disorder, as in the case first reported by myself; or, as in Dr. Ormsby's case, the systemic disorder may be primary and the cutaneous lesions be preceded in every instance by the formation of subcutanous abscesses. In the Busse-Busthke case the systemic and cutaneous lesions appeared about the same time. In at least one reported case there was no cutaneous lesion whatever, the disease being manifested chiefly in the formation of multiple metastatic abscesses in which were found typical blastomycetes.

It is quite possible that in the past some of these cases have escaped detection, even where an autopsy was held, since the gross pathology is so much like that of tuberculosis. In Chicago and its surrounding territory it behooves us, therefore, to be on the lookout for this disease at least in all atypical cases of supposed tuberculosis and in all instances in which metastatic subcutaneous abscesses or nodules form and which cannot be accounted for in other ways.

In response to the question raised, whether tuberculosis has been excluded from these cases, I would say that a careful study of the literature would show that in many of the cases every possible test was made for tuberculosis and the latter carefully excluded.

The systemic case which I reported presented for a number of years cutaneous lesions of a unique character. The patient first came under my care in 1896, when we knew nothing of blastomycosis. It was studied more or less carefully by a number of dermatologists and surgeons in this city, but, though the lesions resembled those of tuberculosis it was generally agreed that the case was unique. I examined many smears and histological sections for tubercle bacilli, and inoculated a number of guinea pigs without finding any evidence of tuberculosis, except the finding of four or five bacilli (which apparently were tubercle bacilli) in a small abscess communicating with the surface of the skin. I was in Europe when the patient died and on my return was told that the autopsy showed military tuberculosis. I accepted the statement, though I was unable to find any of the material or the hospital records of the case.

After I reported the case, Dr. Walker, who (unknown to me) had performed the autopsy, came forward with lung tissue in which he had demonstrated the blastomycetes in large numbers. Though many of the sections of the lung tissue were stained for tubercle bacilli, none could be found.

In all of the cutaneous cases sections have been prepared and searched for tubercle bacilli and in many cases guinea pigs have been inoculated. I reported one case in which a cutaneous blastomycosis was followed by a systemic infection with tuberculosis. Certainly in the systemic case reported by Drs. Ormsby and Miller nothing was left undone to detect tuberculosis had it been present.

Dr. Oliver S. Ormsby: I should like to call the attention of the Society to the preparations under the microscopes. They are smears of pus taken from Dr. Eisendrath's case this afternoon, both from the cutaneous lesions and the deep-

seated subcutaneous lesion, mounted in one per cent potassium hydrate solution. The double-contour, capsule, etc. ,of the organism is well shown, and many budding forms are present. The question Dr. Harpole asked concerning tuberculosis in these cases brings to my mind a case in which that condition was ruled out, so far as our work was able to do this. The case occurred in the consultation practice of Drs. Hyde and Montgomery, and was worked out by Dr. Miller and myself two years ago. Tuberculosis was thoroughly discussed in connection with this case, and our efforts were directed to making the differential diagnosis as certain as possible between tuberculosis and blastomycosis. Some time before the patient died, he was given injections of tuberculin in the usual way, without reaction. Tissue taken both before and after death from the various parts of the body failed to show tubercle bacilli microscopically, culturally or experimentally. Many guinea pigs were inoculated at different periods of the disease and at the post mortem table, and not one developed tuberculosis, but all developed either local or general blastomycosis, except those that died within four days of septic infection, these having been inoculated at the post mortem and infected at that time. The skin, liver, spleen, lungs, kidney, etc., were thoroughly examined microscopically for tubercle bacilli, all with negative results. Hundreds of sections, suitably stained, were examined. Drs. Otis and Evans also examined very many sections of the internal organs with similar results. Both Dr. Hyde and Dr. Montgomery saw many sections and confirmed the findings. In all the work not a single tubercle bacillus was demonstrated. Culturally and experimentally, we could develop only blastomycetes, so that in this case of systemic or generalized blastomycosis we feel warranted in ruling out tuberculosis.

I am exceedingly glad to have had the opportunity of seeing another case of general infection, because, three or four years ago, while in Europe, I was positively convinced that there was no such disorder as blastomycosis existing as a primary infection; but since I have been here I have seen a large number of cases and cannot doubt it, and the evidence is more striking since these systemic cases are being demonstrated and the causative organisms are being found in pure culture throughout the entire human body.

A regular meeting was held March 15, 1905, with Dr. Jacob Frank in the chair.

1. Dr. Frederick Mueller read a paper on "Ultimate Results After the Bloodless Reposition of Congenital Hip Joint Dislocations, with Demonstration of Cases Operated on by Adolph Lorenz, 1902, and Frederick Mueller, 1902-4."

Discussed by Drs. John Ridlon, Edwin W. Ryerson, Edward H. Ochsner, John L. Porter, Arthur B. Hosmer, and, in closing, by Dr. Mueller.

2. Drs. Carl Beck and Carrell, of Lyons, demonstrated specimens illustrating a method of formation of a pre-thoracic esophagus.

Discussed by Drs. Edward H. Ochsner, Jacob Frank, and the discussion closed by Dr. Beck.

3. "Trypanosoma, of Lewis: A Preliminary Study of the Trypanosomiasis of the Wild or City Rat in Chicago, with Demonstration of Specimens," by Dr. John H. Hultgen.

Dr. John Ridlon: Mr. President—I do not think it would be in any way profitable for me to discuss this paper. I have been interested in seeing the patients. I am disappointed in seeing so few of those operated by Dr. Lorenz. I have recognized only one of the twenty-nine cases reported by me a year ago. That case, which I reported as "anterior" when seen two weeks after the operation, is now reported as "subspinous." In those reported a year ago the results perhaps were not final; they were the results at that time. The results were sought after earnestly, and of the twenty-nine cases, one case I was unable to trace. When I saw the case in the cast six weeks after operation, the head was apparently in the acetabulum. In two the results were perfect anatomically, when last seen by me. In six the head could be felt in the groin, and might be considered somewhat anterior to the acetabulum. Thirteen showed the head above the acetabulum. Seven were failures. By failures I do not mean relapses, but failure to effect apparent replacement at the time of the operation.

I entirely agree with all those who practice bloodless replacement in believing it is the best operation for all operable cases, and the only operation to be considered for bi-lateral cases. This I said in my paper a year ago.

As to what percentage of cases are perfect anatomical replacements and what per cent are good results, depends very greatly upon the opinion of the men who examine the cases and determine the results.

In Boston a committee was appointed by one of the medical societies to examine all the cases that had been operated in Boston, those by Lorenz—six, I think, and those by the other surgeons who have operated in Boston. This committee was composed of one orthopedic surgeon and two general surgeons. In all cases X-ray pictures were provided with the patients, and as unprejudiced an examination was made as it was possible for those gentlemen to make, but they differed entirely in many cases with the surgeons who had operated as to what the real result was. The committee believed some cases were perfect anatomical replacements, while the surgeons who operated did not consider them perfect anatomic replacements, and some cases were considered perfect anatomical replacements by the committee that were not so considered by the surgeons themselves; so that with the most honest of motives there may be a difference of opinion as to whether in an individual case there is a perfect anatomical replacement or an imperfect anatomical replacement. In other words, the head may lie secure deeply in front of the acetabulum or a little in front of it, or a little above it. It does not matter whether we have ten or fifty per cent of anatomical replacements; whether we have good results, anterior, supracondyloid, or subspinous; whether these good results are forty or sixty per cent, it does not signify. The point of interest is as to whether bloodless replacement is the best oper-

ation for congenital dislocation of the hip in all cases that are operable by any method, and I am positively of the opinion that it is the best method. I do not think anyone has shown a method that is better than the bloodless replacement; but whether that maneuver shall be performed as Lorenz performs it, or as each of the operators have performed it, in his individual cases, a little differently, flexing the leg a little more or a little less, making greater or less traction, does not signify. The point of interest is as to whether bloodless replacement is a justifiable procedure. If so, it is the best procedure.

I would like to say a word or two in reply to Dr. Ochsner, that it is a mistake to put an age limit to these cases. The age of the patient has nothing to do with the ability to replace. It is the degree of shortening and fixation in the shortened position which makes it impossible to effect satisfactory replacement in some cases while we are successful in others. I have operated and found it impossible sometimes to effect satisfactory reduction or replacement in bilateral cases, even at the age of five or six, because if the patient has an inch and a half of shortening, it is a difficult case. A patient with an inch and three-quarters of shortening is a difficult case. If it is more than that, it is impossible sometimes, particularly if the neck is short and the head depressed, to effect proper replacement, so that the question as to whether a child is five, ten, or thirteen years of age, makes no difference of itself, but it is the degree of shortening that makes the difference, and it is shortening of the blood vessels and nerves that makes it impossible to bring about satisfactory replacement, and not necessarily shortening of the muscles.

Dr. Edwin W. Ryerson: What Dr. Ridlon has said is the opinion of almost all surgeons who have had experience with this method. There is no question in my mind at all that every congenital dislocation of the hip should be operated upon by some procedure, either by the Lorenz method or some other similar method. But shall we stop there or not? No. In my opinion, no case of single congenital dislocation of the hip should be allowed to go through life without everything possible being done, and there are unfortunately quite a number of cases of congenital dislocation of the hip which cannot be reduced by the Lorenz method, or by the modification of Dr. Hoffa, or by any other similar method. There are a good many such hips. Are we simply to throw up our hands when we get so far as that, and leave it alone and not do anything? I believe we should try the Lorenz method several times. Several trials should be made, because it has been found by a number of operators that if an unsuccessful result is obtained at the first trial, a second trial may prove successful in replacing a congenitally dislocated hip. In spite of all the criticisms that have been made about the operation being harmful, I have seen no particularly bad results from it; I have seen no case of destruction of the blood vessels such as we read about. I have seen a fracture produced by the operation below the trochanter which has healed in the usual way, and the dislocated hip joint subsequently was perfectly reducible. I do not believe in this "bogey man" of the terrible dangers of the Lorenz operation. We should not stop with an irreducible single dislocation of the hip joint, when we cannot put it back by the Lorenz method. In a number of instances these conditions can be overcome by open incision, and if I had a boy who had a single dislocation of the hip and I could not replace it by the bloodless method, I would want to have it cut down upon and replaced, because it is usually possible to get the head into the socket by operation, even though some of the cases relapse. Therefore, I go further than Dr. Ridlon and say that if we cannot succeed by the bloodless method, we should not hesitate to cut down onto the head and replace it.

Dr. Edward H. Ochsner: During the past two months I have had occasion to look up the statistics of reposition of the hip, and I have found a tremendous confusion on the subject. There are no two men who use the same terms in the same way. That is the condition of affairs that exists almost always when something new is developed in any of the sciences. It is a condition of affairs that must, however, be overcome.

I must differ with Dr. Ridlon a little when he says that it makes no difference what the per cent of recoveries is. It is a question that must be answered sooner or later, and I think everyone, who does work in this particular line, that is new, ought to make it a business to record his findings, his results, as honestly and faithfully as he can possibly do so, so that statistics can be gathered and arranged in the course of the next five years that will give us an idea of what the ultimate result is in these cases.

First of all, we see and hear the term "perfect anatomical result." We all know that there is no such thing as a perfect anatomical result after a reduction of a congenital dislocation of the hip. We know there is no such thing as a perfect result in anything, and we should not use the term "perfect anatomical result." We do not expect a perfect anatomical result in a simple fracture of the tibia; but we do expect a good anatomical result. We do expect and have a right to expect a good functional result, and should confine ourselves to the use of the term "good," and by good functional anatomical result we should mean a definite thing. If the head of the femur is in the acetabulum, if it stands permanently opposite the Y-cartilage, we have a good anatomical result. If it is a sub-spinous dislocation, it is removed a little bit from the Y-cartilage, and we no longer have a good anatomical result, though we may have a good or even excellent functional result. It is only by using a term in a definite way that we can impart definite knowledge and reach definite conclusions; and the way the English and German languages have been used in discussing this matter of congenital dislocations of the hip is simply scandalous.

Another thing. We should, first of all, in making up our statistics, differentiate between operable cases and non-operable cases. The treatment of congenital dislocation of the hip

by this method or its modifications has been long enough to teach us the age limits. We should classify patients as below the age limit or above it. Only in that way can we get a little order out of the chaos that still exists. Nearly everybody, who has done much of this work, will agree with me that the age limit for a double congenital dislocation of the hip is about six, and for single is about eight. That is quite universally agreed upon. There are of course occasional exceptions to this rule.

From my own personal experience, which has been limited, as I am not an orthopedic surgeon, I am not nearly as pessimistic as many of my friends are. When I said a good anatomical result, I meant that the head stands opposite the Y-cartilage. When I mean a good functional result, I mean that after the patient's hip has been reduced and the patient discharged from care, can walk along the street without anybody knowing what has been the matter with that patient. I do not mean that such patients can possibly be stage dancers or anything of that kind. I mean an ordinary, good result. If we eliminate patients beyond the age limit, and such patients should eliminate themselves in a few years, we should not have children beyond the age limit with congenital dislocation of the hip. My experience has been limited to fourteen or fifteen cases, and of that number I have reduced all except one, and this was a case of double congenital dislocation of the hip, in which I was unable to effect reduction. I can further say, that of the other thirteen or fourteen cases —I have not had a chance to look over my records—in ten the head in either one or both, as the case may have been, has remained, according to the skiagraph, opposite the Y-cartilage after the last cast was removed. Three of them are still under treatment, so that the result cannot be determined yet. They are still in the casts.

As to the functional result, it is good in every one of them. I will venture to say, that if any one of them were allowed to walk along the street, and you were not told that the patient had had a congenital dislocation of the hip, you would not be able to pick him out.

I have seen a great deal of the work of the three most prominent men in this line of work in the world—the three men who have done more than all others put together probably—and it has taught me a few things about congenital dislocation of the hip. Each one has some strong points, and each one has some weak points. Lorenz was the first to bring out the important point of the functional weight method; that is, you put a bone in the right place, keep it there for a sufficient length of time, and let the patient use it, you are going to have a nearly normal joint. That I have proven by one case that came to post mortem. That joint was as nearly normal as anybody wants a joint. Even Lorenz is slowly disregarding the great fundamental principle which he has laid down. I understand that Lorenz is now keeping his patients in casts only for six months. Hoffa keeps his patients in casts for twelve to sixteen weeks. I regard that as a great error, and I believe this is accountable for the great bulk of reluxations, subluxations and subspinous transpositions. If you have once seen a congenital dislocation of the hip before operation, and have once studied the pelvis carefully after the operation, it stands to reason that it is so plain you cannot make a mistake. In fourteen weeks the cotyloid cartilage cannot be developed sufficiently. Retention of the head depends upon three things, namely, first and least, deepening of the acetabulum; second, the shrinking of the capsule; and, third, and principally, the development of the cotyloid cartilage which holds the head in place. No one can tell me that that cotyloid cartilage will develop from some rudimentary form to its perfect form, as it should develop, after the dislocation has been reduced, in fourteen or sixteen weeks. My patients do not get out of their casts for a year, and that is one reason why they do not have reluxations. Another reason is that the head is properly held in place. When the hip is replaced, the acetabulum is so shallow that it cannot keep the head from slipping; the capsule is so long and lax that it canot keep the head from slipping. The cotyloid rim is absent, and what is going to keep the head in place in the acetabulum, until the capsule has shrunken, until the cotyloid ligament has developed, except a cast that is properly applied? And there must not be half an inch of padding which allows the head to move this way or that; if the knee moves half an inch either way, the head may move that mueh, and once out of the acetabulum you are lost. All the men I have seen work, use cotton. They should use nothing but stockinet, and they should apply a cast so that it can be worn a year. If they do, they will have very few reluxations.

There are one or two things that most men do that are bad: After they have reduced a dislocated hip, they allow it to redislocate from two or three to twelve times to see how it works. I have not seen a surgeon who does not do this. After I have had a dislocated hip reduced once, that is all I want. I do not want the head to slip out of the acetabulum again; I want it to stay there. After you have once reduced a dislocated hip joint, you throw it out three or four times and make it very easy for reluxation to occur afterwards.

Another thing: Most men, instead of depending upon the action of the hamstring muscles, which normally pull constantly against the femur and push the head into the acetabulum, overstretch the hamstrings, so that they are useless afterwards. If we will remember the great fundamental principle Lorenz developed, when he first brought out this subject, and apply it in every case and not introduce too many niceties which are useless, we will have a much better percentage of recoveries than we have now.

Dr. John L. Porter: There is not much left for me to say on this subject. I wish to applaud the statement that Dr. Ochsner has made, first and chiefly, in regard to stretching and overstretching the hamstring tendons. I believe this is a mistake, and with Dr. Ochsner I agree that constant traction of the hamstring tendon upon the femur does more to help keep it in place than

almost anything unless it is a plaster cast. The padding which we have used for these casts, many of them, has been too thick. I certainly believe that stockinet is enough, because I have seen several cases of congenital dislocation of the hip in which I knew that the head was in the acetabulum after the operation was done, yet subsequently proved to be in front of the acetabulum when the cast was taken off, and I believe that the stretching of the hamstring tendons, the thick padding which allows a litle play of the head of the femur, and the extreme abduction were the three factors which contributed to the transposition of the head of the femur in front of the acetabulum, instead of holding it in place.

I would like to have Dr. Mueller, in closing the discussion, tell us in how many cases he has obtained what he calls perfect anatomical replacement. I have seen enough of these cases to know that we cannot tell anything about the position of the femur by seeing a child walk.

Dr. Mueller (closing the discussion): In regard to the remarks made by Dr. Porter, I pronounced in each case whether it was a perfect anatomical result or a subspinal position.

About the age limit, I wish to say that I agree with Dr. Ridlon that there are no absolute age limits, though we have relative age limits in a general sense. I remember one case, a lady of twenty-five years, in whom reduction of the dislocated hip was accomplished very satisfactorily. On the other hand there may be some cases that are irreducible, although the children may be from two to three years of age. These cases, however, are exceptions.

Therefore I do not share the opinion recently expressed by Dr. Sherman of San Francisco, that one possibility of reducing a hip joint stands against an overwhelming majority of impossibilities. It must be considered strange, to say the very least, that Dr. Sherman pronounced only one hip reducible among twenty-nine cases. The only excuse for this strange statement may be that he judged these cases from the mere aspect of the open joint, without trying the bloodless reposition.

With reference to the stretching of the hamstrings, I wish to state that this is not a step which belongs to the method of operation rather than to the after-treatment. Certainly the tonus of the tightly stretched hamstring muscles works the head into the socket. But if we avail ourselves of this measure by not stretching the hamstrings, we risk the appearance of a knee contracture.

I saw such a case which I reported upon in 1902 at the West Side Hospital. The child was kept there for thirteen months without having any attention paid to the stretching of the hamstring muscles. When I removed the cast both knee-joints were fixed in a rectangular position and could not be stretched at all. In pursuance to this, I had to make a redressment of the knee joints; treating each side in two sessions and having performed previous to that the tenotomies of the biceps, semimembranosaus and semitendinosus, I succeeded at last in getting the knees straight.

I do not wish to say that such cases are the rule, but that they are apt to happen. Therefore I consider it much better not to take such risks and to stretch the hamstrings, as a knee contracture may annihilate the whole result of the hip operation.

Demonstration of Specimens Illustrating a Method of Formation of a Prethoracic Esophagus.

By Drs. Carl Beck and Alexis Carrell, of Lyons, France.

Dr. Beck said: I wish to make a few remarks in regard to the formation of a new esophagus. Operations on the esophagus become more prominent recently on account of the work of Mikulicz and his assistant Sauerbrush on this organ. Professor Mikulicz has succeeded in operating on the esophagus by the aid of an air chamber, and he has reported at recent meetings of the German and French societies a number of cases of operations on the esophagus.

In our experiments we tried, without the aid of such an apparatus, to make by a plastic a new esophagus.

The esophagus is rarely the object of operations. These operations are done for cancerous obstructions and for benign obstructions. The best results will be obtained in benign strictures of the esophagus. Professor Mikulicz has operated on a number of malignant tumors with the aid of the Sauerbruch chamber. He lays bare the esophagus, resects transversely a portion of the organ, and unites the two ends. The operation which we suggest for bringing together the two ends is by means of a plastic of the esophagus. We have made a number of experiments in this direction, and the results of these experiments I am going to show you. (Here Dr. Beck made a diagram of the stomach.) First, we started to improve the operation of gastrostomy by the formation of a plastic tube in such a manner that we made a tube out of a portion of the larger curvature of the stomach. The gastric artery, which is given off from the lienalis along the side border, runs through the two layers of peritoneum, is taken along with this flap (indicating), and supplies the nutrition of this flap, which, when it is separated, can be turned and made into a tube, and this portion of the stomach (indicating) can be sutured. This small tube we have used as a esophagus. We have turned it upwards and made a gastrostomy which would allow to retain the contents of the stomach, and some of the dogs upon which we have experimented have a perfect fistula, retaining the contents now for two and a half months. The operation has gradually been enlarged in such a way that we have taken the largest portion of the curvature of the stomach and formed a long tube of the entire large curvature of the stomach, turned the tube upward, and brought it forward on the anterior surface of the thorax, and united with a section of the esophagus from above. We laid bare the esophagus from above, brought it into the surface of the thorax and united it with the gastric esophagus. We have a communication between the mouth cavity and stomach through this new esophagus. This op-

eration can be made without the use of the Sauerbruch chamber, but it might be of great value with the Sauerbruch chamber, because the esophagus can be laid in the bed of the resected esophagus when strictured, and can be made in perfect shape, so that the passage from the mouth down to the stomach would be absolutely normal.

Those of you who have seen cases of benign strictures of the esophagus treated with bougies will see the importance of such a plastic.

(Dr. Beck then exhibited speciments illustrating the method he had described.)

Dr. Edward H. Ochsner: I would like to ask Beck whether this artificial esophagus has taken on function, and whether it will pass food down into the stomach. I could not understand from his description whether it would do this or not, or whether it had been tried. Furthermore, whether the human stomach would be long enough in proportion to the distance from its cardiac end to the gullet to make the thing applicable and feasible to the human being.

Dr. Jacob Frank: I noticed in the specimens that were passed around stitches are still in. Apparently the animals died or were killed before the results were obtained.

I would like to ask if any of the animals recovered sufficiently for the sutures to have disappeared, and if so, what the results were afterwards. If Dr. Carrell has carried out these experiments, I would like to ask him whether he knows of any cases where the animals have recovered and how long after the operation they remained well.

Dr. Beck (closing the discussion): What I have said is mainly a communication as to the anatomic possibility of these experiments. Our experiments are too recent to say anything about physiological or other results. You will notice the stitches in a specimen fresh to show them in position, as well as to show the relation of the strictures. We have not yet made sufficient experiments to judge of anything like Dr. Frank asks about. We have made measurements on the cadaver which show that such operation is feasible. We have no chamber to make such experiments. The distance from the esophagus in front in large dogs is much longer than the thoracic esophagus in the normal human being, and this esophagus would be much shorter in the human being. We brought these specimens here to show the anatomic possibility. We are impressed that this plastic is possible if we had the air chamber at hand and we could make one of these junctions in animals, and perhaps in the human being, if we had a suitable case. If we do that, we will report later the results.

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A regular meeting was held March 22, 1905, with Dr. John E. Owens in the chair.

Dr. Richard C. Cabot, of Boston, Mass., delivered an address entitled "the Personal Factor in Hygiene," which was discussed by Drs. John E. Owens, Frederick Leusman, C. W. Abbott, Rosalie M. Ladova, and the discussion closed by Dr. Cabot.

(This discussion was all out of order, and the stenographer was instructed not to transcribe it.)

On motion of Dr. Edward F. Wells, a vote of thanks was extended to Dr. Cabot for his address.

Dr. A. C. Croftan read a paper on "Four Newer Points in the Practical Management of Diabetes."

Discussed by Drs. Joseph Miller, Edward F. Wells, R. W. Webster, A. R. Elliott, and the discussion closed by Dr. Croftan.

Dr. Arthur R. Elliott read a paper entitled, "A Case of Graves' Disease with Unusual Associated Lesions."

Adjourned.

Dr. A. C. Croftan discussed four newer points in the practical management of diabetes under the following heads: (1) The danger of too much meat; (2) the danger of too little carbo hydrate; (3) some errors of fat feeding; (4) some experiences with the "oatmeal cure" and similar methods of dieting. He called attention to the fact that proteids are a very prolific source of sugar in the body as manifested by the appearance of sugar in the urine in diabetes even when patients are placed on a diet containing no carbo hydrates, and as manifested further by the fact that the sugar excretion in such cases can be made to fluctuate with the amount of proteid ingested; of certain experimental evidence to prove the same point and of the finer mechanism of the conversion of proteid to carbo hydrate in the body nothing was said in order not to argue too many theories. The chief dangers of too much meat are threefold, viz: (1) The blood and tissue juices are flooded with superfluous nitrogenous waste that changes the molecular concentration of the blood and interferes with cell function; (2) a continued excess of proteid reduces the tolerance for carbo hydrates; (3) a proteid diet favors acidosis on account of the formation of phosphoric and sulphuric acids. Attention was also called to the fact that different albumens influence the sugar excretion in different ways and that a single albumen (e. g. egg albumen or casein or muscle albumen) given alone seems to produce less glycosuria than several kinds of albumen mixed.

Under the second head, Dr. Croftan discussed the influence of carbo hydrates upon the formation of the substances of the acetone group, i. e. acetone, diacetic acid and oxybutyric acid. He mentioned the fact that in normal subjects the withdrawal of all carbo hydrate led to an excretion of these bodies and that the administration of carbo hydrates readily again caused their disappearance; in diabetes of mild types the same conditions obtained and the withdrawal of all sugars and starches therefore favors acidosis; however, in severe types unfortunately the administration of carbohydrate does not seem to exercise so striking an effect upon the acetone, etc., excretion as in milder cases and in normal subjects; nevertheless in advanced degrees of diabetic acetonuria the administration of some carbo hydrate should always be tried, for the exclusion of carbohydrate forces the organism to attack its own albumens and fats in order to furnish carbo-

hydrate groups; this leads to a nitrogenous deficit that is not always easy to compensate by meat feeding, as demonstrated above.

Fat also forms sugar presumably by way of glycogen; the sugar formed in this way seems however to readily undergo combustion in the diabetic organism; at least fat feeding never seems to exercise an influence directly upon the glycosuria. It is important to remember that in calculating the caloric value of fat in feeding diabetics only that amount of calories is utilized that is represented by the dextrose, the fat is changed to; thus 1g. of fat does not produce 9.3 calories of available calories in the diabetic organism but only the calories that are generated by the 1.61g. of dextrose that this 1g. of fat is converted into, i. e. 1.61 times 4.1 equal 6.6 calories. In feeding fat, therefore, more than the calculated caloric value must always be given. Much has been said in regard to the danger of producing acidosis by fat feeding; as a matter of fact butter does increase the acetone etc., excretion in normal subjects and in diabetics; a large part of this effect can be removed however, by first washing the butter with water to rid it of free fatty acids. In diabetes, moreover, as has repeatedly been shown, the effect of butter upon the acetone excretion does not become apparent until large quantities (i. e. up to 200 g.) are given and then the effect is relatively small; moreover, this effect persists only during the first 10 days or so, after that time the acetone values seem to fall again even though the same large quantities of butter are given. All in all fat is one of the most valuable adjuvants to the diabetic diet and too much can hardly be given; it should, therefore, be administered to the limit of the patients digestive power.

Dr. Croftan described his experience in a number of cases of diabetes that he had placed on the so-called "oat meal cure" first advocated by von Noorden. He gave a short review of other so-called cures with single carbohydrates, as the rice cure of von Duhring, the potato cure of Mosse, the milk cure of Winternitz, and others. They all seem to be based on the fact that occasionally a diabetic can tolerate large quantities of a single carbohydrate just as he can sometimes, as shown, above tolerate single albumens better than a mixture of several. Of nine cases treated rigorously with oat meal, four were decidedly benefited for the time being, the sugar in two instances decreasing very markedly at once; in three cases the results were quite indifferent and in the remaining two cases the results were directly bad, both cases succumbing to coma possibly because valuable time that should have been given to an energetic alkali therapy was sacrificed. So small a series is, of course, without much casuistic value, particularly as the cases all differed in severity and partially in type; nevertheless so much can be learned that the oat meal cure is by no means a panacea, that it occasionally helps but also occasionally does harm, and that it is necessary to strictly individualize in each case in which it is administered. Despite the reduction of tolerance towards carbohydrates (given in the ordinary way) that seemed to follow one or two oat meal courses, despite the terrific acetonuria that was seen to develop in several cases after the oat meal was stopped and ordinary feeding was resumed, the "cure" nevertheless should be tried in hopeless cases, for it may offer a chance, though a slight one, that the diabetic process may occasionally be arrested temporarily and life prolonged.

Discussion on Dr. Croftan's Paper.

Dr. Joseph L. Miller: Dr. Croftan has called attention to some of the fallacies in the treatment of diabetics, and I wish to mention another one which has especially come to my attention, that is, the recommendations by physicians to patients of gluten flour. The patient is given a fairly well regulated diet, with the advice that he may take freely of gluten flour or gluten bread, which he can purchase on the market. The New Hampshire State Board of Health has examined thirteen or fourteen diabetic flours that have been placed on the market, and they were surprised to find that a large number of these had practically the same amount of starch as is contained in ordinary bread. At least one of them had 72 per cent of starch, and a number of them over 65 per cent. Of the thirteen there were only three that had less than 15 per cent of starch. A few years ago I had occasion to have patients try several brands of gluten flour which they bought on the market, and found that they passed during that time an amount of sugar equal to that which they passed when they ate the same amount of ordinary bread.

We must be careful in recommending to these patients that they may buy gluten flour or gluten bread and to eat as much of it as they usually do.

Dr. Edward F. Wells: In connection with the excellent paper presented by Dr. Croftan, I would question the indictment which he has brought against the general profession as to the use, certainly within my time, of such an exclusive meat diet as he has represented. I have seen a fair number of cases of diabetes, have gone over their past histories, and very few indeed have ever been subjected, for any considerable time, to such a strict meat diet as has been stated. I do not believe that the total amount of harm done by the dietetic directions of physicians in the past has been very great.

As to the so-called "oatmeal cure," I fail to understand why such a mess, as has been described, can by any possibility be any more valuable than oatmeal alone without egg mixed with it, and why egg albumen cannot be taken with oatmeal, in a palatable manner, when taken with cream and butter. What is the difference between oatmeal so prepared and graham bread or starch in any of its original forms? Why should physicians, who ought to know better, prescribe any such dietetic absurdities as the oatmeal mixture which has just been mentioned? I have seen it used during a considerable period of time, and certainly to my mind, at least, it has no advantage over the same amount of starch in any other form, the same amount of eggs in any other form, or the same amount of fat in any other form.

Dr. R. W. Webster: I was very much interested in the paper of Dr. Croftan, and more interested perhaps because I have had some opportunity within the last year to study the oatmeal cure of Professor von Noorden. Professor von Noorden does not advocate the oatmeal cure as a cure-all. He says that in certain cases of diabetes, that show a large excretion of sugar, and, at the same time ,a certain percentage of acetone, a small positive reaction for diacetic acid, and a minimum of oxybutyric acid, can be cured for a certain space of time by the use of this oatmeal diet. Certain cases of diabetes, as is well known, excrete a large amount of sugar, and show no acetone or diacetic acid in the urine, but have a large amount of beta-oxybutyric acid. This condition shows that oxidation in the system is much below par, otherwise the beta-oxybutyric acid would not be excreted. Von Noorden does not advocate the oatmeal diet in these cases, but in those in which there is a small amount of acetone or diacetic acid.

Dr. Croftan, I think, has represented the method of administering this oatmeal cure a little too radically. Professor von Noorden's method of giving this cure is to make a thick soup consisting of 250 grams of oatmeal, 100 grams of proteids, and about 300 grams of butter, with some water and a little salt. The mixture is not a bad one to take.

Oatmeal, as ordinarily given in this country, is given with cream and sugar, but when taken with butter and a little bit of beef broth or something of that sort is quite as palatable. This is given in small doses every two hours throughout the twenty-four; and the results are more or less sudden; diminution in the amount of sugar is great; the acetone reaction disappears, and tolerance in some cases is increased, while in others it is diminished.

Concerning some of the other points mentioned in the paper, I wish to say that, in the first place, the use of too much meat, as is well known, or the use of a diet consisting of meat will diminish the acetone bodies in the urine. The reason for this was not known until recently, when it was shown that meat contained a large amount of sugar in its inherent molecules. Therefore, sugar is the active part of meat as far as its influence on the excretion of the acetone bodies is concerned. Meat alone, the proteid part of meat, does not diminish acetonuria; it is the sugar of meat that does the work. As Hirschfield has worked out, the lack of sugar in the food is the cause of the acetonuria. The acetone bodies do not come from the hydrolytic decomposition of the cell proteids, or from the decomposition of the cell carbohydrates, but they must come from the oxidation of those bodies. In order for this to take place, nascent oxygen must be derived from the oxidation of the sugars. I think Dr. Croftan stated that the proteids were largely accountable for the increase in the acetone bodies. If that be true, I would take marked issue with him on that point, inasmuch as recent experiments have shown quite conclusively that the lack of sugar in the food, or lack of oxidizing body in the food, is the cause of the acetonuria.

Regarding the influence of fat upon the metabolic changes in diabetes, it is, of course, well known that they, both in the lower and higher forms, increase the acetone bodies. Hence it is rational to limit, to some extent, the intake of fat, rather than to increase it as has been advocated.

Dr. Arthur R. Elliott: As illustrating possible untoward effects which may follow the oatmeal treatment, I would like to report briefly two recent cases. One was a case of a lean diabetic, forty years of age, who was undergoing rapid emaciation; he had glycosuria, 3 per cent, and marked acidosis. Two weeks after he was put upon the oatmeal diet, he developed cardiac dilatation, became bed-ridden, and shortly after died from the effects of his cardiac failure.

The second patient was a younger diabetic, twenty years of age, who had an enormous polyuria, totaling, when she first came under observation, six quarts in twenty-four hours; 3 per cent of sugar in the urine; there was also marked acidosis. She was placed on the von Noorden oatmeal gruel diet, with bacon and black coffee. Twelve days after the institution of this diet she developed dropsy of the extremities. On listening over the heart, a mitral murmur could be heard. The patient became dyspneic on the slightest exertion. She recovered, at least temporarily, and this improvement still prevails.

These are two experiences among a number of cases in which the diet may have been the cause of the cardiac symptoms or may be nothing more than a coincidence, still I have been inclined to regard it as something more than a coincidence, and believe that the cardiac breakdown was due to the withdrawal of animal proteids.

Dr. Croftan (closing the discussion): The fact that a diabetic occasionally does not improve on the oatmeal treatment does not warrant us in condemning the method altogether. I was very careful to emphasize the uncertainties of this "cure" and its limitations. It has been tried extensively abroad within the last year and the results obtained by foreign clinicians in large series of cases are essentially the same as those that I obtained, i. e., some very severe cases were very much benefited, some cases were not influenced in any way and a few cases were apparently harmed, although the latter proposition, in view of the protean character of the disease, is difficult to prove. At all events, I think that so much is clear, viz.: that in any severe case of diabetes, particularly in adolescents, in which the ordinary dietetic means fails to elicit any response, the oatmeal treatment, or exclusive feeding with some one starchy food, is deserving of trial.

I do not like to hear Dr. Wells make the statement that he does not see how this method can be of any use. Try it, Dr. Wells! and when you have collected the statstics on the subject including your own results, let us hear from you again. Such a priori condemnation of a new method of therapy that has the sanction of leading clinicians here and abroad sounds bad. There were those some years ago who got up in meeting and said similar things about the role

of microbes in the production of infectious diseases; they, too, failed to see how it could be. The burden of proof is on you, Dr. Wells, to show that the method really is "no good."

In regard to Dr. Webster's criticism that meat does not increase acetonuria, I can only reply that I meant to say acidosis and not acetonuria. If I really said acetonuria, then I wish to stand corrected.

Following is a list of delegates and alternates to the Illinois State Medical Society:

Delegates—Billings, Gehrmann, Cook, M. Frank, Evans, Wilder, Dodd, R. Campbell, J. R. Walker, G. F. Lydston, Stowell, Kuflewski, Preble, Harsha, Bacon.

Alternates—Houston, Small, Plummer, Faith, Anthony, R. Campbell, Lobdell, O'Byrne, Feville, Butler, Vanderslice, Wyllys Andrews, McMartin, F. X. Walls, R. Holmes.

JOINT MEETING OF THE CHICAGO NEUROLOGICAL AND CHICAGO MEDICAL SOCIETIES, MARCH 1, 1905.

Dr. R. R. Campbell in the chair.

The following papers were read and discussed:

1. Remarks on the Pus Infections of the Genital Tract in the Male, by Dr. W. T. Belfield.
2. X-Rays as a Means of Diagnosis in Kidney Surgery, by Dr. A. D. Bevan.
3. Diagnosis of Ureteral Stones, by Dr. M. L. Harris.
4. An Attempt to Utilize the Electric Conductivity of the Urine for Clinical Purposes, by Drs. Gustav Kolischer and L. E. Schmidt.
5. Demonstration of Apparatus for Testing the Electric Conductivity of Urine, by Dr. B. C. Corbus.
6. Diagnosis of Renal Syphilis, by Dr. R. R. Campbell.

This symposium was discussed by Drs. R. B. Preble, Carl Beck, Joseph F. Smith, Alex. Hugh Ferguson, David Lieberthal, William T. Belfield, Arthur D. Bevan, Dr. Alfred Parker, Gustav Kolischer, and the discussion closed by Dr. Campbell.

Pus Infections of the Genital Tract in the Male.

Dr. William T. Belfield read a paper on this subject, in which he stated that pus infections of the genital tract in the male are induced by the gonococcus and by the common pyogenic bacteria. To the latter the healthy urethra is immune, since they are found as constantly in the average urethra as in the average mouth; they invade the urethral tissues when the vitality of the latter is reduced by stricture formation or by senility. Pus infections of the senile prostate are common, even before urethral instruments have been introduced. They are commonly mistaken for prostatic hypertrophy, because the subjects are elderly; and they have furnished brilliant cures to the Bottini operation, castration and prostatectomy, though curable without operation, by massage and silver nitrate injections.

The penile urethra is a watershed whose summit is near its middle; the bulbous urethra is therefore a catchbasin for pus during a gonorrhea, and should be washed out by injections; otherwise it becomes the site of stubborn strictures.

The lacunae, ten to twenty in number (the posterior ones opening toward the bladder) the utricle and the prostatic follicles, are accessible to both urethral and internal medica tion. They therefore harbor the infection after the general surface is cured, and may reinfect the latter.

As the embryonic cloaca furnishes both trigonum and deep urethra, a pus infection which reaches the prostate, as gonorrhea usually does, is apt to invade the trigonum also; but it stops there, the rest of the bladder being seldom invaded, as the cystoscope shows. "Gonorrheal cystitis" is a misnomer for an infection limited to the deep urethra and trigonum.

Pus Tubes in the Male. The genital duct proper—seminal vesicle, vas deferens, and epididymis—reacts to the pyogenic bacteria just as does the urethra—that is, by suppuration. This fact has been hitherto overlooked, and gonorrheal epididymitis is even to-day treated as a medical rather than as a surgical disease, probably because fluctuation in the epididymis is so seldom recognized. The author's investigations have shown that the pus infections o the male genital duct are quite analogous to those of the Fallopian tubes; that pus tubes are quite as common in the male as they are known to be in the female; and that acute epididymitis, gonorrheal or other, should be treated as a suppurative process, by incision and drainage. While this may be omitted in the mild cases, it should be practiced in the severe grades, especially when acute hydrocele and scrotal edema appear, for these are infallible signs of suppuration. In chronic epididymitis also, especially when a painful and tender swelling persists in the epididymis, incision or excision of the pus focus may be required.

Direct Medication of the Vas and Vesicle. The author has practiced a therapeutic measure which seems to be novel, namely, the injection of the entire vas deferens and the seminal vesicle through a needle introduced into the vas, just above the epididymis. The therapeutic value of this measure is yet to be determined; at present it is merely asserted that the mucous lining of the vas and seminal vesicle can be mediated in this way.

The pelvic organs of a cadaver were shown, in which this injection had been practiced in situ with Prussian blue; the injected vas and vesicle were seen to be distended and blueish in color.

X-Rays As a Means of Diagnosis in Kidney Surgery.

Dr. Arthur Dean Bevan called attention to the fact that the first work that was done in this country in this line was done in Chicago; that very early after the discovery of the X-ray by Roentgen, Dr. Otto Schmidt developed a complete laboratory for X-ray purposes in this city. He was assisted by Mr. Fuchs, and very early in the work Dr. Bevan had the opportunity of submitting a medical student to

the X-ray and obtained a very good plate. It was a case in which he had already removed a stone from one kidney, and later symptoms had developed suggesting stone in the other. He took an X-ray picture and found on the suspected side very definite evidence of stone. At about the same time Dr. L. L. McArthur had a case which was successful in the sense that the X-ray picture showed a shadow which later proved to be a mass of concretions of gravel, but not a single definite stone. These two cases were the first reported in this country, and were reported before any of this work had been done on the continent. This work was done in Chicago in 1897. Some British and Scottish surgeons had a little before this reported some successful work. He did not think these cases attracted much attention for some time. Even as late as a year ago one of the most prominent surgeons in this country was in the laboratory at the Presbyterian hospital, and with a wave of his hand, said: "I have no confidence in the use of the X-ray as a means of diagnosis in kidney work; I have been fooled by it, and I regard it as an unreliable piece of evidence." However, since that time very definite results have been obtained by the use of the X-ray. Leonard, of Philadelphia, picked up the work which was begun in Chicago, and developed it to a point where he showed pretty conclusively that the evidence furnished by the X-ray was to be relied on, and even went so far as to make the claim which at that time was very generally ridiculed, that the negative evidence, where the differentiation was clear, was also to be relied upon. A little later, after Leonard's paper, Dr. Bevan published a paper in the Annals of Surgery reporting a limited number of cases. He thinks at that time he reported thirteen or fourteen cases, and made the same claim that the X-ray as a means of diagnosis was to be relied upon to a greater extent than any other means we had at our disposal in cases of kidney stone. He went so far as to make the claim that the X-ray picture, showing good differentiation, was to be relied upon very often more than an exploratory incision, because he had early in the work removed a number of kidney stones in cases in which other surgeons had made exploratory incisions and had failed to find stones. He knew from the criticisms that were made at that time that the medical profession generally did not accept his conclusions. Fortunately, this work has been picked up by a number of other men, and he mentioned especially Kummel and his assistant, Rumpell, in Hamburg. He thinks the best exposition of this entire work is to be found in a comparatively recent number of the Beitrage fur Chirurgie, from the pens of Kummel and Rumpell. Kummel takes the position taken by Leonard and the speaker, and presents practically these conclusions, that the X-ray, properly used, will detect a stone in any individual, no matter how thick, and a stone of any chemical composition; tha the detection of the stone does not depend so much upon the chemical composition or thickness of the individual as it does upon the proper use of the X-ray. He thinks the majority of surgeons would not believe that statement. Kummel goes on and says, from experience at that time covering eighteen cases of positive examinations, which were later operated on and the stones found, he meant by that a positive result in eighteen cases in which the X-ray was taken, showing stone in the plate, and the patients were operated upon and the stones found at the time of operation, and in two additional cases he found a stone post-mortem. In a similar number of cases where no stone was found, but where a stone was suspected, other lesions, such as hydronephrosis, pyonephrosis, hypernephroma, tuberculosis, etc. The conclusions of Kummel, Leonard and himself are not accepted to-day, and he wanted to point out why. Most of the work done with the X-ray in kidney stone has been poor work. He has seen a lot of work done at hospitals and in laboratories and submitted to medical men as finished, expert X-ray work, which was not really worthy of attention, which showed no differentiation. He had seen these plates taken by men who were not competent to interpret the findings and determine whether or not stone was present, operate upon the case, find no stone at the time of operation, and condemn the X-ray. The X-ray does not lie in these cases. The X-ray has absolutely no fallacies. To be sure, there will be a given group of cases where the evidence is uncertain, where the individual who is doing this work who is competent to do it and to interpret the work will distinctly place them in an uncertain group. On the other hand, the great majority of cases will be very clear and definite, and will belong distinctly to a group where there is stone or where there is no stone present, and where the differentiation is clear and definite. We have no means at our disposal to-day which gives us the evidence that the X-ray does in kidney stone.

The work which he has been able to do in this line is about the same as that repored by Kummel in the Beitrage, comprising about forty cases. In a discussion of this subject last year, Dr. Joseph F. Smith reported twenty-six or twenty-seven cases of his (Bevan's) work, which he had handled, and the results up to that time were the following: In thirteen cases positive findings and stones found and removed at operation in about the same number of cases, with negative findings, at the time of operation other pathological conditions than stone were found. There was one doubtful case which was clearly stone clinically, and the stone was found at the time of the operation. After the operation one could clearly see in the plates a stone behind the twelfth rib, in a position where it is not often found. The ordinary position of stone in these cases is an inch and a half from the transverse process and a little below the twelfth rib.

With reference to the differential diagnosis between stone and other lesions of the kidney, and between stone and other conditions, such as appendicitis, gall stones and some other complicating conditions on the right side, in a series of several hundred cases collected since the introduction of the X-ray and the use of it in kidney stone work, he has had three cases in

which a diagnosis of appendicitis was made, where the evidence seemed to be definite, the appendix was removed, and where later the X-ray disclosed a stone in the kidney. It is difficult to say definitely whether the symptoms which occurred in these cases were at all times due to the stone, and the appendix was not the organ at fault. In two of these cases he believes that the appendix had not given rise to any symptoms. The history in all three was quite similar: A series of attacks, the appendix removed, and later attacks after the operation. Then, another review of the situation, with the X-ray picture determining the presence of stone, the stone removed and patient cured. A rather interesting feature in one of these cases was found. After the removal of the appendix first and the stone later, the patient was not cured, and a further review of the case showed tubercle bacilli in the urine. The other kidney was found normal, and a nephrectomy resulted in a permanent cure.

In the discussion of the differential diagnosis we should consider gall stones. He has had this experience: The wife of a physician, with repeated attacks of pain upon the right side, suggesting possible attacks of appendicitis, or possibly gall stones, or possibly kidney lesion. A large kidney upon that side fairly movable; an X-ray picture showing in the usual position of a kidney stone a very definite shadow. Fortunately for the patient, her husband, who was a physician and very acute observer, was satisfied that whenever she had an attack there was a distinct small tumor in the region of the gall bladder. At the time he made the examination he thought she had a kidney stone, and that the stone in the shadow was in the kidney. On the evidence submitted by her husband she was operated upon in the region of the gall bladder and found a single stone in the contracted gall bladder. This stone contained a great deal of carbonate of calcium, throwing a shadow as distinct as any kidney stone he has ever seen. In one other case, in a rather thin individual, not emaciated, he found another shadow in exactly the position of a stone in the pelvis of the kidney. The evidence was in favor of gall stone attacks. The picture was one not accompanied with jaundice, except a very slight attack. However, there was such a typical picture, chills and fever, and pain referred to the region of the bile tract, with the absence of distinct kidney symptoms, that a diagnosis of stone in the common duct was made, and later it developed there was a single stone in the common duct. He called attention to the fact that these stones very seldom show in the X-ray. He has learned from this experience, especially in connection with the appendix, to take the X-ray picture of the case submitted to him as a case of appendix trouble to exclude the possibility of kidney stone.

Dr. Bevan then showed numerous skiagraphs illustrating the points brought out by him in his previous remarks.

The Diagnosis of Ureteral Stones.

Dr. M. L. Harris stated that with the possible rare exception of a stone forming about a foreign body or an obstruction in the ureter, all ureteral stones have their origin in the kidneys, whence they migrate to some point in the ureter, where they become arrested. Previous to the migration of a stone the patient may or may not have presented symptoms pointing to kidney trouble, but the act of migrating is almost always accompanied by excruciating pain, known as renal or ureteral colic. The pain does not usually cease suddenly, as when the stone drops into the bladder, followed shortly by its escape from the urethra, but disappears more gradually. The history of such an attack of pain is therefore the first symptom of importance in the diagnosis of ureteral stone. After the stone becomes lodged it may remain latent for an indefinite period, provided it does not completely occlude the lumen of the ureter so as to prevent the passage of the urine around it. More commonly the patient has recurring attacks of pain of varying intensity, and at variable intervals, similar to the original ureteral colic, or a more or less fixed pain or soreness at some point in the lumbar region or along the course of the ureter may persist. The urinary findings and other symptoms are such as are common to kidney stones, or a pyelitis, or ureteritis from other causes, and therefore in no way characteristic. Localized tenderness along the ureter, or an enlarged ureter, if detached, on palpation may have some significance, but are not conclusive. Stones lodged at the lower end of the ureter may be palpated at times through the vagina or more rarely through the rectum. With the exception of these latter cases a diagnosis of ureteral stone based on the symptomatology can never be more than presumptive, and previous to the advent of the Roentgen ray and of the ureteral catheter a diagnosis of a ureteral stone in any portion of the ureter, except the lower end, is almost never made except at an operation. With the aid of the X-ray stones were soon recognized in all portions of the ureter, and when a distinct, well-defined shadow was obtained in the course of this duct a diagnosis of stone was considered positive. The great value of the X-ray was well shown in one of the cases reported by the author. In this case the X-ray not only aided materially in the diagnosis, but by acurately localizing the stone, facilitated its removal. It should be remembered, however, that a skiagram is but a visible expression of the relative facility with which the X-rays are transmitted through the various substances which have been interposed. A shadow in the picture does not in any way define what the cause of that shadow was, but this must be determined entirely from collateral facts. A correct interpretation of the shadows was very important, yet this may be difficult or even impossible without a knowledge of all of the collateral facts pertaining to the particular case in hand.

Dr. Harris directed attention to the possibility of error in interpreting shadows which apparently lie in the course of the ureter, and particularly that portion of the ureter which is contained within the pelvis. He has had two interesting cases recently in which an error of

interpretation of the significance of distinct shadows in this portion of the pelvis was made. These two cases were cited in detail and showed how easy it is to make an error in diagnosis by depending on the X-ray alone in supposed ureteral stones. What the cause of these shadows was still remains a mystery. Whether they were due to phleboliths or to small sesamoids or spots of calcification in some of the muscles of the pelvis he is unable to say, but that they were not due to ureteral stones is certain, and that such shadows cannot by their appearance alone be distinguished from ureteral stones is equally true. These cases also teach us how such errors may be avoided in the future. When such shadows are found in this portion of the pelvis, with symptoms pointing to ureteral stone, the ureters should be catheterized in order to determine whether the shadow actually lies in the course of the ureter, and whether the catheter meets an obstruction at the point indicated. The tip of the bougie may be waxed, so that contact with a foreign body, such as a stone, may be recognized by the indentations made in the wax. It is not his intention to deprecate the value of the X-ray in this work, but to call atention to the fact that there may be other bodies in the pelvis capable of casting shadows which, from appearances alone, cannot be distinguished from shadows cast by ureteral stones, and that in some of these cases a corect diagnosis can be made only by the use of the ureteral bougie.

The Chicago Medical Society held its regular meeting March 1.

An Attempt to Use the Electric Conductivity of Urine for Clinical Purposes.

Drs. Gustav Kolischer and Louis E. Schmidt have tried to determine the functional capacity of the kidneys from a new point of view. They tried to make every kidney a standard unto itself. They investigated whether the secreting efficiency of normal and abnormal kidneys might be influenced in a peculiar and characteristic way ,so the osmotic concentration of the urine voided before and after staining certainly ought to show marked differences. The results of their investigations so far seem to bear out these theoretical speculations. As the most sensitive test they resorted to the test of electric conductivity, and as a method of staining they selected hypodermic injections of indigo carmin. After the stain is brought into the circulation, and after the urine becomes colored, the urine of normal kidneys always shows a slight decrease of electric conductivity, which depression, however, will never exceed nine international ohms. In case urine simultaneously drawn from both normal kidneys shows different electric conductivity before staining, the decrease of conductivity appearing after staining is exactly the same in either specimen. Urine drawn from pathologic kidneys will always, after staining, show a decided increase of electric conductivity. The authors believe they are justified in saying that any increase after staining of electric conductivity beyond ten international ohms is characteristic of impaired health of the kidney. If this increase stays inside the limits of twenty ohms, this kidney may be considered as safe in a surgical sense; that is it can reasonably be expected to be of sufficient functional capacity to attend to the eliminating process after its mate has been removed. Any kidney whose urine after staining shows an increase of electric conductivity beyond twenty ohms has to be considered as absolutely unsafe in a surgical sense. They expect to be able to determine by this method in advance whether a given individual will react as to his kidneys, favorably or unfavorably to the administration of a general anesthetic.

Diagnosis of Syphiloma of Kidneys.

Dr. R. R. Campbell read a paper on this subject, in which he stated that syphilis as an etiologic factor must be seriously considered in inflammatory kidney diseases. That such cases as syphilitic nephritis exist is doubted by some of the best authorities. He does not wish to insist that a syphilitic treatment should be instituted in such cases. Authorities differ, and some even advise very strongly against the use of mercury in these conditions. If there is a syphilitic process of the kidney it should be treated as such, just as syphilis involving any other structure is treated.

Reference was made to the review of the subject of syphilitic changes in the kidneys by Virchow in 1858, and also to the studies of Seiler on syphilitic gumma as early as 1881.

In individuals who have had syphilis and have lacked treatment altogether, or have had but insufficient treatment, syphiloma of the kidney must always be considered in the differentiation of obscure kidney troubles. These affections may be concomitant with other forms of kidney diseases, and it must not be forgotten that only one kidney is usually involved in a gummatous process.

The object of the paper is to point out the possibility of gumma of the kidneys, especially when dealing with "surgical kidney," and where the amount of blood and debris is large or small it should cause one to consider surgical interference.

As to the role that the minute examinations play, such as artificial injection of indigo carmine, the production of artificial glycosuria, inhibition of methylen blue, etc., this can only be surmised, as he knows of no case up to the present in which such findings are reported.

In establishing the diagnosis of syphiloma of the kidney it must be remembered that if the gumma or gummata are of large size the kidney with these irregularities might be palpated. There may be cachexia present. The patient may naturally have lost in weight. With all these signs and symptoms it becomes necessary to differentiate from a malignant growth. However, the indolent character and the benign course of such a tumor always speak for a luetic cause. Wherever these findings are present a nephrectomy must not be done until the possibility of syphilis has been excluded.

Disscussion on the Papers of Drs. Belfield, Bevan, Harris, Schmidt and Campbell.

Dr. R. B. Preble: I feel that all of you will agree with me when I say it is a great pity that Dr. Schmidt felt himself called upon to

limit his paper to the few moments he gave to it, because he dealt with a matter in which we are all keenly interested, namely, the matter of determining the functional activity or capacity of the kidney in all cases where operative procedures on that organ are justifiable. All are familiar with the various methods that have been employed or recommended to determine the funtional activity of either or both kidneys. You know also of the immense amount of work done on these lines, and yet not much progress has been made. In spite of cryoscopy, and in spite of all the work which has been done with reference to determining the excretory powers of the kidney, as shown by the excretion of methylen blue, we may say that so far as this work has yet proceeded very little real progress has been made. The same may be said with regard to the electric conductivity of the urine. However, the work which Drs. Schmidt and Kolischer have been doing would seem to promise something in the way of light on this most obscure and most important question.

There is one other thing which I had in mind to mention to-night, thinking that this subject was to have taken a broader aspect than it has taken, and that is something in regard to the essential characteristics of the pathological conditions of the kidneys suitable for operation. In other words, what are the essential characteristics of surgical affections of the kidney? There is a wide variety of conditions in the kidney which are justly submitted to operation, and there is scarcely any one pathologic process which may not affect the kidney and may not be justifiably operated on. We find operation justified for many circulatory disturbances, for certain inflammatory processes ,for granulomata, for certain parasitic processes, and many neoplasms. But in all these conditons, no matter whether they are circulatory, inflammatory or neoplastic, it is essential that the process be a local one. So soon as the pathological process extends beyond the limits of the kidney and becomes a generalized process the renal affection is no longer suitable for a surgical procedure. For instance, carcinoma of the kidney, so long as it is confined to the kidney, is a surgical affection; but as soon as mestastasis occurs it is no longer such. This, it occurs to me, is of some importance, not alone from this, but also from the oposite point of view.

If local processes in the kidney become unsuitable for operation as soon as they become generalized, it is reasonable to assume that a primarily general disease does not become operable because it localizes in the kidneys. This theoretical objection may be raised to the introduction of surgical procedures into the treatment of renal affections, which are an expression, not of some disease of the kidney, but of constitutional disturbance, as, for instance, nephritis. You will recall that last year we had a series of papers read before the Society in which this question was discussed—the surgical treatment of nephritis, and I am glad to say that almost universally it was agreed that such a condition was not eligible for surgical treatment, and I believe that since that time experience has strengthened rather than weakened that conclusion.

There is one other condition which is frequently subjected to surgical procedure, and against which I must raise some protest, and that is movable kidney. An immense number of operations are being done for movable kidney, and I believe only a small percentage of those operations are in reality justifiable. Here also the rule outlined above will serve as a guide to the right conclusion. So long as the disturbances which result from abnormal motility of the kidney are confined to the kidney itself, operation is justifiable; but when the disturbance is constitutional operation is unjustifiable. What I mean by that is this: If, as a result of motility of the kidney, we have intermittent hydronephrosis, or we have paroxysms of pain, or albuminuria, with casts of blood in the urine, the operation is justifiable. But when we find a combination,, as we so frequently do, of movable kidney, with hysteria and neurasthenia, and an operation is done with the idea of correcting a functional, nervous process, then I believe operation is not only unjustifiable, but should be absolutely condemned, and judging from the frequency with which I see women suffering from hysterical and neurasthenic conditions in whom an operation of that sort has been done, we ultimately arrive at the same conclusion in regard to fixation of the kidney in cases of hysteria and neurasthenia that we have reached, for example, in regard to the repair of laceration of the cervix or of laceration of the perineum for the cure of these same neuroses. I believe that a great many of the conditions which have been mentioned to-night by others and some which have been discussed by myself are operable, so long as they are local; but as soon as the disturbances or processes become generalized they cease to be remediable by operative procedure.

Dr. Carl Beck: The paper of Drs. Schmidt and Kolischer interested me because it touches some points which are very important for the surgeon. When the question arises whether we should or should not remove a pathologic kidney it becomes very important to decide whether there is another kidney, and if it is there, whether it is functionating or not. Cryoscopy has been considered one of the best means to determine that. Kummel, whom I saw demonstrate the experiment the first time, has been very enthusiastic about the results of his investigations in cryoscopy, but he himself and all the rest of the investigators have lost a good deal of hope that we are able to determine satisfactorily the function of the kidney by cryoscopy alone. The same is said of the phloridzin and the color tests, and we sincerely hope that Drs. Schmidt and Kolischer will solve this problem in their investigations How important this investigation is I found out only a few weeks ago in a case which I will relate briefly, because I have used a method which I do not think will prove practical in every particular case, and which is more sur-

gical than a physiological method. I have a case at the hospital now of a woman with a tubercular kidney. She came with severe and profuse hematuria and intense pain. The hemorrhages pointed to the right kidney as the source. There was a tumor of the right kidney. The kidney was twice the size of the normal kidney, distended by fluid, and very tender. The woman had no symptoms of tuberculosis elsewhere, but the kidney was to all appearances, so far as clinical examination could show, either tubercular or a kidney containing a stone and pus. Catheterization of the ureters was impossible on account or local irritative conditions of the bladder. Inasmuch as the case was an urgent one, I decided to operate, and then, according to the findings, do what was indicated. I brought the kidney out upon the surface of the body fully and determined that there were two places which pointed to the presence of pus within the kidney. I opened these and characteristic pus (tubercular) was discharged. I opened into the pelvis of the kidney, and then the question arose, inasmuch as the larger portion of the kidney was diseased whether the kidney should be removed or not. As a cryoscopic xamination, as well as other examinations, were not made, and I did not know whether the other kidney, if there was one, was normal or not, I decided to leave the kidney outside on the surface and to watch the other kidney and the secretions from it. I left the kidney outside of the body for eight days. I packed the bed of the kidney with gauze tc keep it open in case I wanted to replace it if I found the other was not good. After a few days we catheterized a ureter, and found only one ureter accessible, and this was the ureter of the supposed healthy kidney. The urine of that kidney proved to be urine from a kidney that was thoroughly diseased, and at the end of eight days I replaced the kidney, after I had treated the abscesses of the kidney locally thoroughly, and now healing is taking place This is the surgical test of the kidney. I could test the urine of each kidney separately withou making use of the physiological tests otherwise indicated. I think such a procedure could be used in a number of cases almost in the same manner if we could bring the kidney out, separate it clear down, the pedicle containing nothing but artery and vein, and with simply clamping, take the pedicle out if we want to remove it, or replace it in case of local abscesses or ordinary wounds. At first I was afraid the stretching of the vessels or the dislocation might have a bad result; that I might have a hematoma or other conditions, but it did not seem to have any effect whatsoever on the kidney, although the displacement was considerable. The kidney itself seemed much better instead of worse from the displacement. The urine has since become normal; blood has disappeared, as well as pus and pain. A fistula still remains, although it is getting much better.

Dr. Joseph E. Smith: In regard to the matter of diagnosis of the kidney stones, in some of the skiagraphs passed around this evening there were various small objects that were marked "not stones found at operation." I have observed in a good many skiagraphs of the pelvis that we get small, indefinite shadows oposite the spine of the ischium, and it seems to me the probable explanation is that they are small sesamoid bones that ocur in that region. It is not an uncommon thing to find them in the skiagraphs of cases taken for other conditions in the hip joint or pelvis, where there are no symptoms of ureteral or kidney stone present, and they are decidedly misleading in a great many cases. They very much resemble small, round stones that might easily be supposed to be calculi in the lower end of the ureter.

In regard to the occasional mistakes that may be made in the diagnosis of stones in the ureter, it has been pointed out several times that other bodies occur in this region which may give shadows very much like those of ureteral calculi, and the explanation that has been offered is that they are either phleboliths that ocur in the veins in that vicinity, or calcified lymph nodes. I do not know that any particular case has ever been demonstrated post-mortem where a shadow resembling a stone in the ureter has been shown to be due to a calcareous lymphatic gland; but such cases have been reported where shadows in that region have been shown not to be stones in the ureter, and I do not see any reason why a calcified lymph node might not lead to that conclusion. It has been suggested by various workers in this field that in order to avoid this source of error the ureteral bougie passed into the ureter wil show that the shadow of the stone does not lie in the course of the ureter. Where this is possible this fallacy can sometimes be obviated.

In making kidney skiagraphs the essential thing is, first, to secure the necessary degree of penetration, and at the same time preserve the proper differentiation. We have to be guided by the thickness of the patient as to the degree of penetration required in any particular case, and the character of the tube we are using, whether it is hard or soft, determines whether it shall be a penetrating or a light that is not penetrating. In a thick patient it is necessary to have a higher degree of penetration, and in proportion as the degree of penetration increases the differentiation decreases. In all cases where the patients are sufficiently thin if good penetration can be secured with a low vacuum tube, thereby preserving the maximum differentiation, we can be more certain of the results.

Another faction that enters into the success of this matter in a large degree is the so-called diffusion of the rays. There is no doubt that every bit of tissue in the path of the rays becomes in itself a secondary source of radiation, and the more directions the rays take as they pass through the body of the patient, the greater diffusion we have, and therefore the more indistinct the image. Since the entire surface of tube that is used in producing light is more or less a source of rays, it is desirable to exclude all rays except those that come from the small center at the anode of the tube. To do this the tube can be enclosed in an

opaque shield, which serves as a means of protection to the operator, and at the same time it excludes all the extraneous rays that come from the surface of the tube, and gives a cone of light on which the rays are practically parallel. Then, in addition, if we place below the shield a large sheet of lead with an opening two or three inches in diameter, we can still further diminish the cone of light, and renders the rays more nearly parallel.

Dr. Alexander Hugh Ferguson: When I was asked to take part in this symposium I did not think I would be able to attend the meeting, but being here and having been asked to say a few words, I would like to remark, first, with regard to Belfield's paper, that I can look back upon a large number of cases of epididymitis whose course no doubt would have been shortened by early incisions, and I believe he has brought forward an advance in the surgery of the epididymis.

I have had considerable experience with kidney stones, and I can corroborate almost every word that has been said by Drs. Bevan and Harris. I had a very interesting case some five or six years ago, in which there were two small stones, one in the upper pole of the kidney and the other in the lower. The patient had many stones removed from the kidney by a surgeon in Omaha at two sittings previously. Were it not for the X-ray showing the locality of these small stones, I am sure that one of them would not likely have been found at the operation. I probed for a long time, and it was only after a good deal of difficulty I found the small stone and removed it. My experience with the X-ray in kidney stones convinces me that it is the best and most reliable single means we have of diagnosing stone in the kidney.

The joint paper of Drs. Schmidt and Kolischer has been exceedingly interesting and scientific, and it is truly to be hoped that something will be worked out relative to the functional activity of the kidney as to whether it will be operable or not. Even though something is accomplished along this line there may be a fallacy in this regard, that it may not prove to be as practicable as it is scientific. I mean by that statement that to-day we operate upon kidneys that we think are not performing their function properly, but when we open those kidneys their function is restored. Take the early cases of acute nephritis, or the cases reported in the last few years of anuria, in which there was almost complete suspension of the function of the kidneys, and we find their function was restored by operation.

I cannot take my seat, although it is a little foreign to the subject of this symposium, without referring a little to the great assurance with which the internist expresses his surgical views here taught. It is really refreshing for Dr. Preble to come forward and tell us that such and such a case is operable, and that such and such a case is not operable. I venture to say that Dr. Preble has never stood by the side of a case of interstitial nephritis, examined it carefully before and during operation, followed the case afterward, and seen the immediate and remote results. His dictum does not settle the matter by any means, and I am sure that he has only voiced the vision of his own horizon.

Dr. David Lieberthal: I am familiar with the work of Drs. Kolischer and Schmidt, and believe it is in the right direction. Should these experiments not prove perfectly successful they will doubtless add to our knowledge of the functional disturbances of the kidney.

I was much interested in Dr. Campbell's paper. Syphilis in every stage may cause affections of the kidney. Syphiloma of the kidney is practically not diagnosed intra vitam, but is usually discovered at the post-mortem table. It is important to know that an affection of the kidney may also ocur in the early stage of the disease, even at the beginning of the secondary symptoms, in the form of glomerular nephritis. urthermore, we know that mercury, the most important drug in the treatment of syphilis, may cause irritation of the kidneys. When at that stage syphilis is diagnosed and the kidneys are found affected, it is either due to syphilis or to other causes, and in the latter case is either recent or of long-standing. Mercurial treatment will cure the kidneys if their affection is specific, but is apt to aggravate the condition is non-specific.

Therefore, the condition of the kidneys should be watched throughout the whole course, and the treatment regulated accordingly.

Dr. William T. Belfield: I am incompetent to criticize the work of Drs. Schmidt and Kolischer; yet I am more deeply impressed by its excellence than by anything we have heard here on the determination of renal activity.

I am one of the numerous objectors to the optimistic view that the X-ray is an infallible diagnostic aid in kidney and ureteral stones, as maintained by Dr. Leonard, of Philadelphia, and by Dr. Bevan. We cannot trust the X-ray positively or negatively, in spite of the very large amount of excellent work that has been done by it. We know that certain calculi escape the X-ray; on the other hand, as Dr. Harris' two cases have illustrated, the X-ray may show calculi which, on post-mortem, cannot be discovered. Whether these are sesamoid bones, calcified lymph glands, or phleboliths, is, of course, immaterial. I have in my hand three phleboliths as large as buckshot, which I picked up accidentally in anatomical work on the ureter and the vas deferens. These are evidently, from their looks and feel, lime calculi. They lay in a vein directly behind the ureter.

It is doubtful whether even a probe introduced into the ureter through the cystoscope would have determined that these were not ureteral stones, even though the probe failed to touch them.

The X-ray is valuable, but certainly not infallible.

Dr. Arthur Dean Bevan: With reference to the remarks made by Dr. Belfield, I would like to say that my discussion was limited to kidney stone. Dr. Harris and I had a definite understanding that I was not to touch on stone in the ureter. The points brought out by Drs. Harris and Schmidt were true. I have no doubt I

have seen twenty skiagraphs in which there was not the least bit of evidence of any kidney trouble or anything suggestive of kidney stone trouble. The statements which I made related entirely to stone in the kidney, and I am very glad Dr. Harris brought out the very important point of the difficulty of determining the exact character of these shadows in the pelvis. My own experience now comprises thirty to forty cases in which we have actually operated upon kidneys, where the question of kidney stone has been considered and determined by the X-ray. We have had but one failure out of this number of cases. Kummel had none. Mayo, who was here the other day from Rochester, told me that he has adopted the same technique we are following at the Presbyterian hospital, which for a long time was most unsatisfactory and difficult, has now become most satisfactory. I do not deny the possibility that there is a fair percentage of error, and this may be as high as ten per cent. I am perfectly willing to admit that there is a leeway of ten per cent; but, after all, what means of diagnosis in medicine have we that has not such a leeway? What means of diagnosis have we that is as accurate? My plea is that mistakes are made because the work is not done well and the skiagraphs are not well interpreted. I am willing to admit that if the work is done by the best men and in the best way there will be a small percentage of error. Nothing is infallible. The position should be taken that the X-ray is one of the most accurate means of diagnosis that we have in medicine, and that it should be properly employed and correctly interpreted.

Dr. Alfred Parker: In regard to Dr. Belfield's paper,, I think we are too conservative in the treatment of pyogenic infections of the male genital organs. In pyogenic infection of any other organ we would not wait as we do in cases of epididymitis and pus infection of the seminal vesicles, but incise, as by waiting and giving nothing but symptomatic treatment, as we usually do in epididymitis, we let the disease make headway, and finally we get the bad results which have been referred to. If we would follow the suggestions of Dr. Belfield and drain each case of epididymitis, in my opinion, some of the consequences we see at the present time would not occur.

Dr. Gustav Kolischer: After the flattering remarks that have been made I would like to say a few words regarding early work with the X-ray. The first men to recognize the necessity that something should be added to the usual X-ray work in trying to locate a kidney or ureteral stone were Dr. Louis E. Schmidt and myself, and about four years ago we made a preliminary report before this Society pointing out this factor and showing skiagraphs which were taken. We were the first to suggest the introduction of lead wires as substances which would show up in an X-ray picture in the ureters and in the kidneys, not only for the purpose of diagnosing ureteral stone, but we showed by pictures and by reports of cases that it is very important to do that in a case of kidney stone, because it is very easy after such a picture is taken to determine whether the stone is located in the pelvis of the kidney or in the parenchyma. One case, which occurred in the practice of Dr. Schmidt, bears this out. The patient was a man, who had stone in the kidney. He had symptoms of stone in that organ. The skiagraph showed a shadow of a stone. The patient was operated upon by an able surgeon, who could not find the stone. We then took a skiagraph, after a lead wire was introduced into the ureter and into the renal pelvis. The stone was at a considerable distance from the end of the lead wire; consequently the stone was not in the pelvis of the kidney. Guided by the picture and the lead wire, the operator now reached the stone by the first incision, because he knew then where to look for it.

This X-ray work has been taken up to some extent in France and Germany; but we have not seen many reports so far. Dr. Schmidt and myself are entitled to the credit for priority in this work, although we are practicing in Chicago.

As to tests for the electric conductivity of the urine, I want to say this: There are two objections which might be raised, even admitting that the principles of this method are true. One is the objection raised by Dr. Ferguson, and about which there is some misunderstanding. He said the test will not be as practicable as it is scientific, because it will contradict certain principles which are made by surgeons who operate for nephritis, the so-called Edebohls operation. Dr. Ferguson is mistaken in that direction. We claim that if our test is true we established the fact that there is a one-sided nephritis. There are cases where only one kidney is inflamed, and there can be only one real indication for operating on nephritis, namely, when only one kidney is involved. If we have bilateral nephritis, then, of course, the objections raised by Dr. Prebie hold true.

Another objection raised against this method was that it necessitates the catheterization of the ureters to obtain the urine separately from each kidney. That is no objection whatever. Catheterization of the ureters is not reserved for a few men. There is no mystery about it. Some are more expert in doing it than others. While it is true that in certain cases it is difficult or impossible to catheterize the ureters, there are other methods which fail in other cases. There is no uniformly successful diagnostic method. It does not exist.

I am pleased to state that a number of men whom Dr. Belfield, Dr. Schmidt and I have heard sneer at the use of the cystoscope are now using it with satisfaction. They have become convinced of its value in catheterizing the ureters.

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JOINT MEETING OF THE CHICAGO NEUROLOGICAL AND CHICAGO MEDICAL SOCIETIES, HELD MARCH 29, 1905.

The President of the Chicago Neurological Society, Dr. Harold N. Moyer, in the chair.

Symposium on Exophthalmic Goitre.

Dr. L. F. Barker opened the discussion on the symposium with a paper on

The General Considerations.

He says the disease has been named after in-

vestigators in several countries. Thus in English textbooks it is frequently referred to as Graves' disease; in Germany, as Basedow's disease; in Italy, as Flajani's disease. But the syndrome was undoubtedly very well described by Parry earlier than by any of the authors mentioned, and strictly speaking we should, therefore, if we refer to the disease under the name of any one man, call it Parry's disease.

The affection has been treated monographically several times. The best monograph on the subject is, he thinks, that of Moebius, published in 1896. There are but few facts known concerning the disease which are not dealt with in his treatise, and the speaker has drawn liberally upon it in the preparation of this review.

During the last fifty years knowledge of the disease has increased with great rapidity. Everyone has become familiar with its outspoken forms, and the recognition of more obscure types has been rendered easier. The rarer symptoms of the disease have been carefully investigated; numerous new signs have been discovered; and the significance and frequency of many of the phenomena have been established.

While the nature of the affection is not yet wholly clear, great strides have been made toward an understanding of it. The theory that a disturbance of the thyroid gland is responsible for the symptoms of the disease is now the dominant one, but, as will be pointed out later, this view has not met with universal acceptance, and there are some points difficult to reconcile with any of the theories yet propounded.

In the treatment of exophthalmic goitre a great deal has been accomplished, really much more than is generally recognized. For the prevalent opinion among physicians and the laity seems to be that the disease is incurable; whereas the literature shows, and the experience of men who have dealt widely with the disease proves, that a good many cases get well. Some patients apparently recover spontaneously; others, and in considerable numbers, after special treatment, medical or surgical, or both.

With regard to the etiology, it is known that the disease occurs nearly five times as frequently in the female as in the male; that it is commonest in early life, and especially in the third decade; that it has a tendency to appear in the so-called neuropathic families; that many cases of the disease may occur in one family; that it often develops after emotional shock or prolonged emotional disturbance; that occasionally it appears as a sequel of some infectious process; and, finally, that, as far as has yet been made out, climatic and terrestial conditions play no important role in its causation, though it would appear that it is rather more common in districts where ordinary goitre is prevalent. The disease has been met with in lower animals, in the dog, in horses and in cattle. Whether it is more frequent now than formerly cannot be definitely stated, but it seems rather strange that so striking a symptom-complex as typical exophthalmic goitre presents should not have been more commonly recorded in the older medical literature.

As the cardinal symptoms of the disease are usually described, we have the tetrad-tachycardia, goitre, exophthalmos, and tremor. In well-marked cases all these symptoms may be present, but in undoubted instances of the disease, one, two or even three of them may be absent. Some have even gone as far as to diagnose the disease in the absence of any one of these four symptoms. As a consideration of the atypical forms is to be discussed by Dr. Mettler, he would say nothing further on this phase of the subject.

Aside from the thyroid gland, it is the circulatory system, the nervous system, the eyes and the skin, the functions of which are especially disordered, though there are also evidences of disturbed activity in still other parts of the body which must be referred to.

One of the circulatory disturbances, the tachycardia, is usually the first symptom to be manifest. It is rarely, if ever, absent in the disease, and the character of the symptom affords perhaps more information than that of any other regarding the course of the disease. The heart beats more rapidly and more powerfully than normal, and the patient has a disturbing subjective sense of palpitation. The tachycardia may be paroxysmal at first, but later often becomes continuous. Indeed, tachycardia unrelated to disturbances of digestion or to organic disease should always excite suspicion of the possible existence of Parry's disease. Occasionally murmurs may be heard over the heart, especially at the base. Angina pectoris is not infrequently encountered. An interesting symptom on the part of the circulatory system is the marked pulsation of peripheral arteries, which may be limited to a group of vessels, most often the carotids; or it may be general; often one set of vessels will pulsate more at one time and another set at another; the throbbing may even be unilateral. In severe cases actual hemorrhages from small vessels may occur.

The enlargement of the thyroid, in Parry's disease, is worthy of special consideration, for in the first place the Parry syndrome can appear after an ordinary goitre, though in many instances the goitre develops along with the other symptoms. This fact has led Moebius to divide the cases of Parry's disease into two groups: (1) The primary cases, and (2) the secondary cases. In the primary cases the struma is usually soft, the gland may not be very much enlarged and often the right lobe is more increased in size than the left. Large vessels cover the gland. The carotid pulsation is transmitted by it; a distinct thrill can often be felt on palpation and on listening to the tumor a systolic blow may be heard. Guttmann distinguishes an arterial bruit from a venous bruit, and believes that these sounds, if present, are pathognomonic for the disease. The goitre develops, as a rule, very slowly, but in some cases it grows with great rapidity, attaining a considerable size in a few days, or even within a few hours. It must be remembered that the parenchymatous changes in the gland characteristic of the disease may be present in the absence of goitre, and, further, that the goitre, at any rate in the primary cases, may be

largely due to the dilatation of the blood vessels of the gland, for the gland is often markedly collapsible after death. Careful studies of the histological appearances of the gland have been made by Greenfield, Renaut, Brissaud, and others. There is a peculiar hyperplasia of the gland acini. Colloid is usually absent. According to Renaut, the lymph vessels in the central part of the glandular lobules are obliterated, while those at the periphery, the interlobular lymph vessels, are excessively distended. He believes that the absence of colloid is due to its transformation into a substance which he calls thyromucoin.

Many of the symptoms of exophthalmic goitre are directly referable to a disturbance of the functions of the nervous system, and it is not surprising that many of the theories of the disease make it neural in origin. The psyche of the individual is rarely normal. Increased irritability is often one of the first signs. I have been much surprised in looking over the literature to observe how frequently cases of exophthalmic goitre have been associated with definite psychoses, with mania, with melancholia, and with other forms of insanity. Even when no definite psychosis exists, it is not uncommon to find patients over-cheerful or excessively depressed. Insomnia is a common symptom. Flushings of heat are complained of.

Perhaps the most important nervous symptom is the tremor. It has been carefully studied by P. Marie, and is now regarded as a very constant phenomenon, though it undergoes marked variation in degree and continuousness. The tremor is usually fine and rapid; the rhythmical oscillations number from eight to ten per second. Among other nervous symptoms, tonic spasms, sometimes resembling those of tetany, and epileptiform attacks, may be mentioned. A symptom which is not at all uncommon is marked muscular weakness, which may become so exaggerated as to render the patient bed-ridden. Actual paralyses are described; Charcot called attention to the paraparesis which may occur, and German writers describe what they call the "Basedow paralyses." As a rule, the tendon reflexes are not markedly altered, but they may be increased or diminished. It is a striking fact in pathological anatomy that despite the marked clinical symptoms referable to the nervous system, actual demonstrable lesions are rarely to be met with. It would appear that the poison in the disease, in acting upon the neural structures, is able to destroy functions without leaving behind indications of its action discoverable by our present histological methods.

The eye symptoms of the disease are among the most characteristic. The exophthalmos appears to be due chiefly to the dilatation of the blood vessels of the orbit, though in long-standing cases an increase of the adipose tissue may be partly responsible therefor. The symptoms known by the name of von Graefe is very often present, though not constantly. It may easily be overlooked unless tested for carefully, and he hoped Dr. Gradle would describe in detail the best method of eliciting the sign. Stellwag's symptom, the widened lid slit and the infrequent winking, is one of the earliest and most constant signs of the disease, and together with the exophthalmos causes the goggle eye. Moebius' symptom, insufficiency of convergence, best brought out by telling the patient first to look at the ceiling and then at the end of his nose, is an important accessory sign, though not pathognomonic. With the insufficiency there is no diplopia, though the patient may experience a feeling of tension. Actual eye muscle paralyses are rare, but do occur, and may be associated with paralyses in the domain of the fifth and the seventh cerebral nerve. Tremor of the eyeball, tremor of the eyelid (Rosenbach's symptom), excessive lacrimation, are among the other occasional eye symptoms. He mentioned these only, as Dr. Gradle was to take up the ophthalmological side of the clinical picture in detail.

On the part of the skin, increased sweating is the most important symptom. The increased moisture due to it appears to be responsible for the lessened resistance of the skin to the passage of the electric current (Vigoroux's symptom). The skin may be pigmented, sometimes as markedly as in Addison's disease. There may be circumscribed edema; urticaria factitia is not uncommon. Occasionally marked trophic disturbances, including falling out of the hair and scleroderma, may be met with, especially where exophthalmic goitre is complicated by myxedema.

The symptoms referable to other parts of the body may be dismissed in a few words. Diarrhoea is not infrequently a troublesome symptom. According to the researches of F. Mueller, metabolism must be profoundly altered, for in spite of the bulimia usually present in this disease, the patients emaciate rapidly and the nitrogen output exceeds the intake. Transient fever is very often present, even in the mild cases, but a high temperature, or one lasting over a long period, is seldom met with except in the severer forms of the malady. Gowers has called attention to the enlargement of the lymphatic glands, which may be present, and Markham asserts that a persistent thymus may nearly always be found at autopsy. A sign contributed by an American clinician, the so-called Bryson's sign, consists in the slight expansion of the thorax on inspiration. It has been commented upon, among others, by Patrick.

Four principal theories of the disease have been put forward: (1) That it is due to disease of the sympathetic nervous system; (2) that the seat of the malady is in the medulla oblongata; (3) that it is primarily a disease of the thyroid gland, and (4) that it is a neurosis.

The tachycardia, the throbbing and dilatation of the blood vessels, the vaso-motor and secretory disturbances generally, and the exophthalmos naturally have directed the attention of investigators toward the sympathetic nervous system. The fact that some of the symptoms point to paralysis of the sympathetic, and others to irritation, need not necessarily militate against the view, since it is common in neural lesions to meet with such mixed symptoms.

That the medulla oblongata is the seat of the

disease is a theory founded on very few objective facts. There have, it is true, been found occasionally at autopsy slight lesions in the medulla oblongata, such as ecchymoses in the floor of the fourth ventricle, partial agenesis or atrophy of the tractus solitiarius, but nothing of a pathologico-anatomical nature has ever been observed, which could satisfactorily account for Parry's syndrome. It was Filehne's experiments, he takes it, upon the corpus retiforme which lent most support to the bulbar theory. He produced some of the symptoms of the disease, and his experiments have been more or less confirmed by other observers. The work should undoubtedly be further followed up. The well known fact that in strong emotional excitement, for example, in horror, the eyes protrude, and are fixed upon the horrible object, the heart beats fast, the individual breaks out into a sweat, and sometimes even the thyroid is temporarily enlarged, has been used to favor the bulbar hypothesis, it being assumed that there must be some center in the medulla oblongata, stimulation of which calls forth the combination of symptoms mentioned.

The dominant theory at the present time is that in which a primary disease of the thyreoid gland is made responsible for the affection. Since 1873, when Gull described myxedema, and in 1878, when Ord showed that the thyeroid is atrophied in that disease, progress concerning the relation of the thyreoid gland to the rest of the organism has been making rapidly. In 1882 Reverdin demonstrated that on excision of the thyreoid in animals a myxedema operativum develops, the condition subsequently designated by Kocher as cachexia strumapriva. Later Murray discovered that the feeding of thyreoid substance to myxedematous patients or to animals with cachexia strumapriva would cause the symptoms to vanish, whereupon the belief seemed well founded that myxedema is due to diminution or loss of activity of the thyreoid gland. Now histological examination and macroscopic observation have shown that in exophthalmic goitre we have to deal, as a rule, not with an atrophy, but with an hypertrophy of the thyreoid gland, and in 1886 Moebius advanced the hypothesis that Basedow's disease is the result of a pathologically increased activity of the thyreoid. He suggested that in exophthalmic goitre we have to deal with a primary disease of the thyreoid, as a result of which a secondary intoxication of the rest of the body occurs, giving rise to the other symptoms. He urged that since the disease is a form of goitre, it is easy to understand the part played by heredity, the predominance among females, the influence of disease of the sexual organs, its occurrence along with other forms of goitre, the occasional transition to myxedema and the success of operative treatment. It has for some time been asserted that the feeding of thyreoid glands in excess may produce some of the symptoms of exophthalmic goitre, though not all of them. Experiments connected therewith have, it is true, caused much discussion. Buschan declared that he took a large number of thyreoid tablets without toxic effect, and Gregor reports prolonged feeding of idiot children with thyreoid substance without the production of Basedow's symptoms. On the other hand, Notthafft records a case where actual exophthalmic goitre developed after the ingestion of 1,000 tablets, and Oppenheim tells of an instance in which a woman receiving nine tablets per day to combat obesity, became the victim of Basedow's disease. The fact that exophthalmic goitre is occasionally associated with myxedema would seem to contradict Mobius' hypothesis, for according to his first conception of the disease myxedema and exophthalmic goitre are the very antithesis of one another, the former being due to an atrophy of the gland, with loss of function; the latter to an hypertrophy of the gland with increase of function. Mobius, however, does not regard the simultaneous occurrence of the two diseases as inconsistent with his theory since, as he now conceives of exophthalmic goitre, there is along with the early hypertrophy and hyperthyreoidization a perversion of function, the so called dysthyreosis. This could easily go over in late stages of the disease into athyrea.

Modern therapeutic measures have been largely based upon the thyreoid theory and the results of therapeusis have been adduced in support of it. There is no gainsaying the fact that the results of partial strumectomy indicate that the successful removal of a portion of the thyreoid gland can lead to pure or to definite amelioration of the condition. The statistics of Heydenrich, Starr, Rembach-Mikulicz and Kocher are very interesting and convincing. Again, the reports of the French surgeons, especially those of Chipault and Jonnesco who resect the sympathetic on one or both sides in order to affect the thyreoid secretion are very suggestive. The treatment by an antithyreoid serum appears to have given in some cases remarkable results. On the theory that the thyreoid secretion normally neutralizes certain general metabolic poisons in the body, Mobius and others conceived of treating cases of exophthalmic goitre in which there is presumably an excess of thyreoid secretion in the body, by introducing subcutaneously or by the mouth the serum of thyreoidectomized animals. It was hoped that the non-neutralized general metabolic poisons of such animals would nullify the toxic effect of the excessive thyreoid secretion. Merck's antithyreoidin, Burghardt and Blumenthal's "rodagen," Hallion and Carion's glycerin extracts of the blood serum, Vallet and Enriquez's serum, and Lanz's milk of thyreoidectomized goats—all are administered on this principle.

The theory that exophthalmic goitre is primarily a neurosis, first championed by Charcot and his pupils, still has supporters among the ablest men of the profession. A survey of the whole subject makes the speaker personally unwilling for the present to deny it. The history of the affection, its etiology, its complications, the spontaneous cures which occur, the remarkable influence at times of suggestion, all make one think of a neurosis. Undoubtedly, the function of the thyreoid is gravely altered

in the disease, but those who hold to the neurosis theory look upon the thyreoid change as secondary to a primary nervous disease. But such an assumption is far from satisfying, for one should have then to seek the cause of the neurosis. The fact is the pathogenesis of exophthalmic goitre is still wrapped in mystery.

As to treatment, experience has shown the great importance of general measures; complete rest for a time, fresh air, careful diet, mild balneotherapy, all are useful. He personally favors rest, isolation and systematic psychotherapy as a routine treatment. In cases which do not respond to this or to antithyreoid therapy, operation may be considered, but if it is to be done, it should be undertaken before marked cachexia develops, and before the heart is too seriously diseased. Before any safe conclusions can be drawn regarding any form of treatment, a large number of cases should be observed over long periods. Results so favorable as to be startling have been obtained from the most diverse forms of treatment, even from feeding thyreoid as well as from antithyreoid medication.

Dr. Mettler's paper will be found on page 391.

Ocular Symptoms of Graves' Disease.

Dr. Henry Gradle discussed this phase of the subject, saying that in well marked Graves' disease the patient has a wild, staring look, amounting to even an expression of terror. This is caused by protrusion of the eyeballs together with retraction of the upper eyelid, whereby some of the sclera is exposed to view above the cornea. The widening of the lid aperture is peculiar to this disease, and does not accompany protrusion of the eyeball from other causes. The exophthalmos varies in degree. It may be so pronounced that the lids cannot be closed. Even partial forward dislocation of the eyeball has been seen on attempting forcible closure of the lids. On the other hand, the exophthalmos may be inconspicuous or not alike in the two eyes. One-sided exophthalmos is not excessively rare. Indeed, the diagnosis of Graves' disease is occasionally certain, even without exophthalmos, or the latter may develop after the other cardinal symptoms have existed for a while. Conversely, protrusion of the eyes or even of one eye only, when accompanied by the characteristic retraction of the upper lid justifies the diagnosis of incipient or incomplete Graves' disease, even though goitre and heart symptoms be absent.

The retraction of the upper lid exposing the sclera to an abnormal extent is perhaps more characteristic of Graves' disease than mere protrusion of the eye. It is less often absent than the exophthalmos, and, like the latter, it is occasionally, though rarely, one-sided. In rare instances it is present without exophthalmos. At times the lower lid, too, seems slightly retracted. The retraction of the eyelid is often called Stellwag's sign, but not properly so, for it has been described previously. Stellwag really was the first to call attention to the infrequency of winking movements of the lids in this disease.

The exposure of the sclera is exaggerated when the patient looks downward. In the normal person the downward motion of the eye is accompanied by dropping of the upper lid, so that nothing above the upper corneo-scleral junction is exposed to view. Von Graefe pointed out that in most instances of Basedow's disease the upper lid does not follow the downward motion of the eye, but lags behind, and hence looking down intensifies the strange expression of the patient. Von Graefe's symptom is not constant.

Pigmentation of the skin, resembling the bronze color of Addison's disease, has been noted especially by Drummond, on various areas of the body and also around the eyes. Jellineck has lately again referred to the diffuse brown coloring of the skin of the eyelids, the upper more than the lower, as an early, though not constant and sometimes evanescent, symptom in exophthalmic goitre.

Moebius has observed insufficiency of the converging power of the eyes as a fairly frequent occurrence in Graves' disease. On following an object approaching the face, one eye will cease converging and will deviate outward when the object is within some five to eight inches, instead of the normal near point of convergence of about three inches. The patient may in consequence complain of fatigue of the eyes when doing near work.

Pulsation of the arteries of the retina has been described by Becker as common in this disease. Other observers have not seen this pulsation as often as Becker.

The protrusion of the eyeball is partly due to increased vascularity of the orbit, as it always diminishes after death. In some autopsies the eyeballs, prominent in life, were even found receded to normal position, and no anomalies were observed in the orbit. In other post-mortem records the exophthalmos was explained by the increased amount of fat found within the orbit. The ocular muscles were infiltrated with fat and the optic nerves elongated.

The retraction of the upper lid can be imitated by the action of the orbital muscle of Mueller under the influence of the stimulated cervical sympathetic nerve. In man, its condrooping of the lid, is observed when the sympathetic has been paralyzed by any lesion. Yet in an autopsy of Drummond's, no Mueller muscle could be found at all on dissecting the orbit.

When recovery occurs in this disease, either spontaneously or under treatment, the eye symptoms can disappear completely. Some instances have been observed, however, in which a slight degree of exophthalmos existed after apparent recovery from the other manifestations of the disease. If the disease continues without improvement, there is no reason to fear any eye complications or sequels except danger to the cornea in relatively rare instances. This relatively favorable prognosis was particularly emphasized at a discussion on Graves' disease before the Ophthalmological Society of the United Kingdom, in May, 1886, in which probably the largest collected experiences of the world were brought out. A few exceptional cases in which optic neuritis, optic atrophy, or

ocular palsies have been observed must be regarded as coincidences of separate lesions in neuropathic subjects.

When the gaping lids afford insufficient protection to the exposed cornea, ulceration of the latter may take place. This does not seem to be a frequent occurrence, especially in recent times. Personally, the author has seen one instance of it which proved manageable. It was mentioned in the earlier German literature, and seems to have been observed most frequently in the case of elderly men, in whom the entire prognosis is more serious than in woman or in general in younger people. It can be guarded against or made to heal when not too far progressed by a protective bandage or operative closure of the gaping lid aperture.

There is a single case on record by Dor, of the occurrence of conical cornea in a patient with Graves' disease. The causative relation of the latter to the stretching and deformity of the cornea was suggested to Dor by the unusual improvement of the kerato-conus in both eyes, only one of which had been operated upon, when the patient recovered from the goitre under the administration of thymus. It has been the author's fortune to have seen recently a similar coincidence of these two obscure conditions—exophthalmic goitre and conical cornea.

The Serum Treatment of Exophthalmic Goitre.

Dr. Harold N. Moyer said that until the last few years the obscurity in which we labored in regard to the etiology and pathological changes responsible for the symptom-complex of Graves' disease precluded all possibility of adopting any rational method of treatment for this affection. Digitalis, strychnia, belladonna, the bromides, rest cure, massage, electricity, and the numerous other remedial measures have all failed in the majority of instances to produce any material effect upon the course of the disease. Since Moebius, Ballet and Enriquez and other investigators conceded that exophthalmic goitre was due to a functional derangement (an excessive or perverted secretion) of the thyreoid gland, considerable progress has been made in the treatment of this affection. If the disease be the result of a too abundant or an excessively toxic secretion of the thyreoid gland, the only rational form of therapy consists either in checking this secretion or else in neutralizing the toxic products thrown into the blood stream. The first of these alternatives was beyond our control, but, as the thyreoid secretion is perhaps normally neutralized by certain antibodies present in the blood, the serum or blood of animals from which the thyreoid gland had been removed and in which these anti-bodies had been allowed to accumulate for some time, should prove capable of neutralizing the excessive or perverted secretions causing Graves' disease.

The first experiments conducted along these lines were undertaken independently of each other by Ballett and Enriquez in Paris and Lanz, in Amsterdam. The former used the serum, the latter the milk of thyreoidectomized animals. The results obtained by either method were very encouraging. Further experiments along these lines were conducted by Burghart, Schultes, Goebel, Moebius, and others, some using the milk, others the blood of thyreoidectomized animals. The same properties which were found in the blood and serum proved to be present also, although in not as great a concentration in the milk of these animals. The latter was preferred by some experimenters because it proved less expensive than the pure serà. The serum was at first administered subcutaneously, but as it was found that the same results could be obtained by using slightly larger doses per os, this latter method was considered more desirable. Since the results of the investigators above referred to have been published, there have appeared occasional articles, especially in the German medical journals, reporting cases treated by the use of preparations derived from thyreoidectomized animals.

E. V. Leyden, in the Medizinische Klinik, Dec. 1, 1904, in an article entitled "The Organotherapy of Graves' Disease," gives a comprehensive historical review of the evolution of these products and reports a few cases successfully treated by the milk of thyreoidectomized animals.

H. Hempel and K. Thienger both report favorably upon the use of Moebius' anti-thyreoid in serum, as prepared by Merck and Co. The harmlessness of all these preparations is self-evident, and all reports unanimously attribute to them much therapeutic value in cases of exophthalmic goitre. Almost without exception the rapid pulse rate, the palpitation, tumultuous and irregular heart action, are much improved. Vertigo, cyanosis, precordial distress, and other annoying symptoms due to the cardiac derangement disappear. The restlessness, insomnia, irritability, rhythmic tremor and other nervous and motor disturbances characteristic of the disease are greatly relieved, changing in a short time a condition of pitiable distress into one of comparative comfort. In most all cases a marked effect is noted upon the appetite, the weight increases, while the circumference of the neck decreases in those cases where glandular enlargement is present. In fact, the action of these remedies in cases of exophthalmic goitre seems almost a specific. Whether the prolonged exhibition of these preparations will eventually produce retrogressive changes in the gland or correct the deranged secretion, thus producing complete and permanent cure, remains still to be proven.

The new preparation—thyreoidectin—is derived from the blood of thyreoidectomized animals. In the preparation of these capsules, not only the serum but the entire blood has been utilized. It forms a reddish-brown powder, readily soluble, non-toxic, unirritating to and rapidly absorbed from the stomach. It is put up in five grain capsules, of which one or two are administered three times a day, according to the needs of the individual case. This remedy has fairly passed the experimental stage; it has been placed in the hands of prominent neurologists in this country, who are careful observers, and have testified to the fact that it possesses at least the greatest palliative value in the treatment of exophthalmic goitre.

Although thyreoidectin is recommended especially for the treatment of exophthalmic goitre, it may also prove of value in various nervous disorders of obscure etiology, more or less closely related to Graves' disease, although the author has no actual data on the use of the preparation in these conditions.

A preparation similar to thyreoidectin has been in use on the continent for some time. Dr. S. Christens has used milk (rodagen) and serum of thyreoidectomized goats, but for the last four years has confined himself to the use of blood tablets prepared in the following manner: The blood of a thyreoidectomized goat is distributed in thin layers in shallow dishes, dried in an incubator at body temperature, powdered, some gum added, and made into 35 cgm. (5 gr.) tablets. These tablets proved readily soluble in artificial gastric juice. Christens has treated up to this time 18 cases, all of which, with the exception of a few which were treated only a short time, were considerably benefitted. He claims that in this specific organotherapy we possess a valuable pallative therapeutic aid in the treatment of Graves' disease, which should be resorted to in all cases.

Personal Experience With the Serum Treatment in Exophthalmic Goitre.

Dr. Sydney Kuh discussed this phase of the subject. He reported 11 cases of exophthalmic goitre, of whom one was treated by the administration of the serum of the thyreoidectomized animal furnished by Merck, while in other cases either the liquid or the desiccated serum furnished by Parke, Davis and Co., was given.

His conclusions are as follows: His experience has not been sufficient to justify him in making any statement as to the curative effects of the serum. He believes, however, that he is justified in saying that, it is an excellent palliative, at least; that it is not an infallible remedy is very probably true. Amongst the 11 cases there was one in which the effect of the treatment was temporary only, and another in which there was possibly no effect at all. One thing was very striking, and that was the marked and rapid improvement in the subjective condition of most of the patients. Within a few days after taking the first dose of the serum they would report a change for the better. The remedy influences the pulse probably as much as anything that is employed in the treatment of tachycardia in exophthalmic goitre; it increases the appetite and decreases nervousness. It has, if one may judge from the series of cases reported, a pronounced tendency to increase the weight. Theoretically, it seems hardly probable that the results from the serum should be permanent. One perhaps may expect that after some time a smaller dose may suffice, that perhaps an intermittent treatment only may be required. In one case, the first one reported, the patient has been without serum now for quite a long period—for approximately two and a half years, and has remained in excellent health all the time, but it seems doubtful whether she will remain in that condition unless she occasionally takes a few doses of the serum.

Two Severe Cases of Exophthalmic Goitre.

Dr. Charles L. Mix said he has had two very pronounced cases of exophthalmic goitre since Dr. Moyer put the serum into his possession. The first of these was a woman, who was in the Mercy Hospital for quite a period, with no diagnosis. Her case was regarded as a peculiar one. It was recognized that the heart was dilated, but further than that, and further than the neurasthenic and hysterical symptoms, nothing positive was made out. When he returned from his vacation in August, or September, the interne showed him the woman, and after a while the speaker recognized the case as one of exophthalmic goitre. He showed her to Dr. Moyer, who bore witness to the exquisite von Graefe's sign which was present. In fact, Dr. Moyer told him that it was one of the best he had ever seen in any case. The patient's pulse ranged from 120 to 130; it reached even 140.

As to the modus operandi of this serum, the theory of Moebius is very simple. Myxedema and exophthalmic goitre are antipathal diseases. Myxedema is due to a diminution in the proper secretions of the thyroid gland, and atrophy possibly of the glandular tissue, while exophthalmic goitre is due, according to the theory of Moebius, to an excess of secretion or of some substance which circulates in the blood and has some definite purpose. In the case of myxedema it is necessary to give patients the thyroid gland, to introduce into their bodies or tissues substance they need; and, conversely, in a case of exophthalmic goitre it is necessary to take out of the body of the individual those substances which are poisoning him or her, as the case may be. This we may not be able to do, but these poisonous substances can be neutralized, and the question is how to make the neutralization possible. The easiest way, according to Ballet, of Paris, and Moebius was to remove the thyroid gland from an animal, and the animal would acquire myxedema. By giving blood serum to this myxedematous animal, to a person with exophthalmic goitre, one would simply add minus 1 plus 1 and get nothing. That is the way the thing practically works out.

In this case this woman weighed from 22 to 30 pounds less than she does at the present time. She was toxic in the ordinary sense of the word. One symptom characteristic of exophthalmic goitre is myasthenia. All of these individuals are weak. There may possibly be some relationship between myasthenia gravis and the thyroid gland, or possibly the relationship is one entirely of the muscles. But in this particular case the woman, who was bedridden, who had to give up doing housework and had to go to a hospital, to remain there for weeks in bed, was taken by a visiting nurse to Grove House, and is now working there in a laundry. She has gained forty pounds since she has been in Grove House, and her pulse ranges in the nineties at the present time. She is working for her living, and can work satisfactorily for a time. In addition to the improvement in tachycardia; in addition to the gain in weight, and in addition to the gain in

strength, the doing away of myasthenia, we have a very pronounced effect also in the condition of the thyroid gland. The neck has diminished materially in size. The heart also has decreased in size materially.

The other case is one very much worse than this. There is no particular harm in mentioning names. I will say, that Dr. Doering saw this woman and said he could not do any more for her. He gave her up. Dr. Murphy saw the woman and gave a similar prognosis. Dr. Herrick also saw her, and told her he could do nothing for her. Dr. Babcock, who saw her, said it would be impossible practically to do anything for her. Why? Because she had reached the stage when the heart was giving way, when edema was rapidly appearing. She had very marked ascites. The girth of the navel was 37 inches. Her legs were excessively edematous. Her heart was a beautiful example of delirium cordis. The pulse rate ranged between 140 and 150; the neck measured 14½ inches in circumference. She was 20 pounds under weight, but after the disappearance of the ascites she gained 20 pounds. At first she refused to take serum, but she was finally induced to take it, and took it in doses of 2 c.c. three times a day, which was afterwards reduced to 1 c.c., three times a day, and then the serum was abandoned altogether, and dry serum was given. The other case took the dry serum from the start. She was given thyreoidectomized serum, or the serum from a thyreoidectomized horse was injected, and the patient grew worse, so that she would have nothing to do with horse serum. Goat serum proved to be her salvation. After taking it during the winter, the patient was able to come to the speaker's office, during which time Dr. Moyer saw her. She had also visited his house on one occasion, and would have been at the meeting tonight if there had not been a sudden change in the weather. She has gained something like 20 pounds in weight; her pulse rate at present is about 111.

There is one thing very important in connection with this case, and that is Dr. Mix made a diagnosis of absolute, not relative, mitral insufficiency. Today he does not believe it was there. He believes it was entirely relative.

There is one other practical point in regard to the method of administration of the serum. He believes there is a neutralization point in these cases beyond the peradventure of doubt. He has proved that in this case. If he gave too large doses hypodermically, the woman would have marked symptoms of cardiac failure which resembled those of angina pectoris.

They were associated with pain in the arm. The danger of collapse was so great on one occasion that the author was telephoned for and certain stimulants were given at the time, and after the dose had been decreased the patient got along better. On the other hand, he thinks that one can give too little. In the other case he has referred to, the one with ascites, he tried to reduce the dose to ten grains a day. But this was too little, as the patient began to get worse again. She would take fifteen grains daily without any particular difficulty, and he presumes that in the course of time it will be possible to reduce that still further.

In regard to the last point which he has in mind he did not wish to be understood as looking upon these cases as permanent cures. He thinks physicians will all reach precisely the same opinion in regard to serum-therapy in this disease as they have reached in cases of myxedema. According to Moebius, and to his limited observation in these cases, we have got to neutralize the condition; we have got to give enough serum to neutralize it, and as we go along we will have less and less neutralization to make, so that ultimately we will have less and less dosage to give, until finally it will be quite easy to run these patients on a very limited amount of serum—may be give it to them once or twice a week.

The possibilities of this method of treatment have been exploited in the foreign medical journals, and those who have read them must have noticed the favorable accounts concerning rodagen, with dried goats' milk, which has been used so favorably by so many investigators. Von Leyden, after some experience with this remedy, gives his unqualified endorsement of it.

It seems to the speaker, with these two cases, which were severe ones, with such remarkable restoration to health after the use of the serum, there can be no two sides to this question, that in a well-defined case of exophthalmic goitre, the serum treatment affords us very great possibilities.

Discussion.

Dr. Harold N. Moyer agreed with Dr. Mix that the two cases reported were extreme ones of exophthalmic goitre. He does not think he ever saw a more severe case; but he did not see either of them in the very worst stages, but at the time he looked upon them as cases with very little hopes of recovery. Of three cases of his own that were operated upon, all died.

As to the word cure, Dr. Mix expressed some doubt. The speaker did not think it was a good remark, as cases of exophthalmic goitre got well without any treatment. If they recover without treatment, they should recover from the use of serum some times. There is unquestionably a vicious circle in cases of exophthalmic goitre as in other affections, and if one can improve the physical condition of the patient, can control the symptoms, he gives the patient a chance to recover.

Dr. Julius Grinker said it was almost sacrilegious to break in upon a discussion dealing with such optimistic reports on the benefits or cures by a new serum treatment. However, he thinks it is necessary to sound a note of conservatism. There were pros and cons to this subject. Dr. Mix was very enthusiastic over two cases of Graves' disease, treated by the new method. Dr. Grinker has seen a case that was almost as bad as, if not worse than, the bad one cited by Dr. Mix, who got well in spite of treatment given by various physicians, and the patient consulted at least twenty. This patient is now practicing law. From having been reduced to a skeleton and ready for the grave, he had

gained in weight and strength so that now he was practically well. Dr. Grinker had seen a few other cases recover, after they had discarded all treatment.

He expected Dr. Kuh would have a series of parallel cases to report—so-called control experiments—in order to show the efficacy of the serum, and that those cases would be put upon rest—simple rest and the ordinary treatment, and then compared with those treated with the serum. However, this was not done. He believes the benefit derived from the serum treatment was due very largely to rest rather than to the serum.

As to the rapid changes in weight in cases of exophthalmic goitre, he would say that those who have observed cases have seen patients lose ten to fifteen pounds within a week, and then just as quickly recover them.

This ability to lose and gain weight rapidly is almost pathognomonic for this disease, so that a temporary gain in weight is no criterion of successful treatment.

Dr. Grinker quoted from a recent number of the Deutsche Klinik, which contains a review of Basedow's disease, its present status in theory and practice. The article was written by Eulenburg, who has practiced neurology for forty years, and has seen 600 cases of Graves' disease. He sees now about 30 or 40 cases of Basedow's disease annually, according to his own statement. In the last few years a number of preparations have been heralded broadcast with the greatest eclat, heavily advertised, and called by such names as antitoxin, antithryreoidin, rodagen, Basedowin, etc. A little later thyreoidectomized goats' milk had been used. Quite recently antithyreoidin, upon the suggestion of Moebius, has been introduced, and Eulenberg describes what it is as follows: "It is simply blood serum taken from thyreoidectomized goats about six weeks after the removal of the thyreoid gland, and bottled up in 10 c. c. vials. Each flask is sold at the reasonable rate of six marks. As in the course of treatment 4½ c. c. doses may be required, three times a day, the specific is rather expensive. . . . I have tried this remedy in a number of cases, some mild, and some rather severe, and have not gained the impression that it possesses specific effects, either curative or ameliorative. In three out of six cases I have noticed dimunition in the size of the thyreoid gland, in one where the thyreoid was not very much enlarged, to begin with. But I have not noticed any change in the cardiac-vascular disturbances, and if there was any, it was only transient. In one case there was even an increase of the tachycardia, with irregularity of the heart's action, and a great amount of dyspnea. In the other cases every sign of improvement was lacking."

Dr. Grinker says that Eulenberg speaks very discouragingly of the operative treatment in this disease. He further wished to say that it is necessary for us to know that so far, even with the cases that have been reported tonight, we have had no convincing proofs of the efficacy of the new treatment; yet it is our duty to try it—try it as skeptics,, and not as enthusiasts. In the cases that have been cited, the serum has not done very much, perhaps nothing more than the old treatment by means of galvanizing the sympathetic, or the treatment of using anything and everything.

Dr. Moyer stated that he thinks the serum will be a diagnostic aid, and that whenever a patient does not improve on serum, the diagnosis of exophthalmic goitre was probably wrong, and after making that statement he says that some of his patients get well without any treatment. He supposes that every case of Graves' disease is benefitted by the serum treatment, but close scrutiny reveals only a pious wish.

He was glad to hear what Dr. Kuh had to say at the conclusion of his paper, that he hopes the serum may prove palliative. We all hope so.

He thinks that Dr. Mix is too enthusiastic, and to him he has already replied that he has seen as bad cases get well without treatment.

In connection with the discussion of the subject of exophthalmic goitre as a whole, the following may not be out of place: In 1900, Dr. R. Breuer, one of Nothnagel's assistants, reported ten cases of either thyreoidism or exophthalmic goitre produced by the administration of iodine. These patients had been taking iodine for a long time; they were elderly patients, somewhat broken down in health, and developed typical Basedow's disease. He shows that iodine given internally in the form of the iodides or applied externally may produce exophthalmic goitre which will persist long after the discontinuance of the drug. The practical point is, that when iodine is administered for a long period of time the physician should be very careful to examine for symptoms of so-called thyreoidism or Basedow's disease, which, of course, are not identical with the ordinary iodine intoxication, which is well known. It is claimed that in certain regious of Europe, where goitre or ordinary struma is prevalent, patients are more apt to develop Basedow's disease upon receiving iodine treatment. Dr. Grinker thinks it would be interesting to lok for these cases and report them.

Dr. L. L. McArthur said he had learned through the industry of those who had taken part in the symposium that the source of the poison in cases of exophthalmic goitre is resident in a change in the thyroid gland. Whether this source be in a perverted secretion or a hypersecretion in not of great moment. It is believed that it is due to the presence in the blood of toxic products which produce the thyroid symptoms; and then the statement was made by one of the speakers that this poison cannot be extracted from the blood, but must be neutralized. He therefore wished to say that it can be prevented from getting into the blood by the removal of the greater part of the thyroid gland, as has been done and frequently demonstrated, and the number of cures is now sufficiently large to be encouraging, so that it would be a mistake to convey the impression that every case of thyroid enlargement, associated wtih peculiar nervous phenomena, is necessarily fatal if operated. He thinks Dr. Moyer has been extremely unfortunate in the experience he has had, namely, three deaths in three cases that were operated upon for well-

marked exophthalmic goitre. Dr. McArthur made a plea that cases of exophthalmic goitre be turned over to the surgeon before they are desperately ill or in the last stages of the disease. Turning these patients over to the surgeons when they are desperately ill from exophthalmic goitre was analogous to sending fourdroyant cases of appendicitis to the surgeon.

According to the most recent literature, Kocher, Mikulicz, and others have reported favorable results following operations in cases of exophthalmic goitre.

Dr. McArthur said while surgeons would hail with delight any prospect of improvement in these cases by the serum treatment or any treatment and would welcome it, particularly in the desperate cases on which surgeons would conclude to operate, he would still say that there was sufficient assurance of cure in the majority of cases, if taken early, from operations. At any rate, a still larger proportion of cures could be obtained from early operation than could be hoped for from a treatment which only aims at neutralizing the septic product of the disease.

Dr. C. C. O'Byrne concurred in the remarks of the last speaker. Sometimes there is a single nodule in the thyreoid gland, very firm, and caused the symptoms of Graves' disease, perhaps as commonly or more so than a diffuse enlargement. He cited two such cases, one a medical student, who consulted him with reference to a small lump on the inside of the neck. The symptoms complained of were those of extreme nervousness, wakefulness, increase in the size of the gland, dyspnea on exertion, but no exophthalmos, no apparent struma, but at the time the speaker saw the patient he had a well-marked tremor, pulse 100, and easily excited. The single nodule was about the size of a walnut, situated in the lower part of the thyreoid gland on the left side. This nodule was removed, and followed by relief of all symptoms.

The other patient, also a student, had a uniform enlargement of the thyreoid gland, soft and pulsating; pulse exceeded 100. Patient was very nervous; had tremor of the hands and lips; exophthalmos; disturbance of vision. Patient was put on the serum treatment, but no improvement in symptoms was observed from its use. He operated, removed the nodule, which was followed by disappearance of the symptoms.

He has also operated on a case in which there was a diffuse enlargement of the gland, but the patient died on the second day following operation.

Dr. Moyer, in closing the discussion, said he did not wish to convey the impression that surgery was valueless in cases of exophthalmic goitre. He simply mentioned the fact that three of his operative cases died. These were desperate cases. Surgery is undoubtedly of value in suitable and selected cases.

CHICAGO NEUROLOGICAL SOCIETY.

A regular meeting was held Feb. 16, with the president, Dr. Harold N. Moyer, in the chair.

Dr. Geo. W. Hall presented a case of idiopathic muscular atrophy with bilateral ptosis and complete ophthalmoplegia externa, stating that the case was a boy aged 11 years who according to the mother was perfectly healthy until age 4 years, when he had scarlet fever followed by gradual increasing difficulty in walking. The condition of the eyes had never been noticed by her. The family history was negative. The case approached the Landouzy-Dejerine type of the disease but the boy can close his eyes and mouth very well. The reaction of the eyes to light and accommodation was normal. There were no fibrellary twitchings, and the muscles responded to faradism. Patellar and radial reflexes were present but decreased. There was an absence of sensory and sphincter disturbances. Typical method of rising from the floor was demonstrated. The chief point of interest in the case was the presence of the bilateral ophthalmoplegia externa, which was probably congenital due to nuclear involvement.

Dr. L. F. Barker said the case was interesting to him as to the exact relation of the ophthalmoplegia to the muscular atrophy. If it is primary in the eye muscles it is the only case on record. The ophthalmoplegia is not a part of the general myopathy. The fact that it is so complete seems to make it very probable that it is binuclear. One or two cases of myopia have been examined by taking out a bit of the muscle and are said to have shown a typical change, though but one muscle was paralyzed. Here we have complete bilateral. It would hardly be supposed that some of the face muscles would not be involved, so I lean to the view expressed that this is a combination of the nuclear disease with the myopia. It may be congenital, or it may have followed the scarlet fever. I do not think this could possibly be anterior horn disease, from the general distribution of the atrophy.

Dr. Harold N. Moyer said it seemed to him the distinctions made in these clinical types were somewhat involved. In some of these cases some muscles will show hypertrophy while others show the opposite, and it never had seemed to him a well founded distinction. In this case, as in most others, can be seen two types mixed.

Dr. Hall added that the boy had had a pneumonia unresolved for some time, and there was still evidence of the old inflammation on the right side. In these cases it is not uncommon to find chest inflammation, owing to the poor muscular action.

A case of intermittent claudication was presented by **Dr. James B. Herrick.** The patient had first been seen by Dr. Jacques, to whom credit should be given for the diagnosis. The patient is a Hebrew, 38 years old, a peddler, with no history of excessive alcoholism, no history of syphilis or over-indulgence in tobacco. He first noticed something wrong with the foot about one year ago, when he had some pain in the sole of the foot and noticed that on walking he would have some pain in the foot and the calf of the leg would pain and become stiff and cramped, and on walking the right foot would become almost as though dead, and white. Four months later a somewhat similar feeling was experienced in the left foot. There was the same painful sensation on elevating the foot and the same loss

of color. If he allows the foot to hang down it becomes more or less red, much as in erythromelalgia. Some time ago what he took to be little abrasions appeared on the outer and inner surface of the right foot. These increased in size and there was more or less burning in or around these ulcers. Later the nail of the little toe became affected and loose and a small ulcer appeared on the inner aspect of the little toe. A few weeks ago in the night he was taken with a good sharp pain in the pericardiac region, running out into the arm, and resembled in some respects angina pectoris.

The physical examination, with the exception of the feet, is practically negative, but the radial pulse is small and of low tension. The registration is in the right pulse 120 m.m. of mercury, and in the left 90, instead of the average of 140. No arteries can be felt in the foot. The dorsal and posterior tibial arteries cannot be palpated, and nothing approaching sclerosis can be made out in the radials. Even in bed and quiet, he has more or less pain in the foot. The same phenomena of paleness and pain in the foot can be produced by pressure on the femoral as he lies in bed. In walking one of the chief complaints is the pain in the calf of the leg. The case seems to be one of intermittent claudication. These cases that have been described have most of them shown arteriosclerosis, both in amputated limbs and in autopsy. In this case we make out no arteriosclerosis, but in some of the cases of Charcot and Erb there was complete absence of pulse in the foot, and this patient shows, as do many of their cases, either gangrene of the toe or some trophic disturbance. The relation between this and erythromelalgia would seem to be close. Erb in the conclusion of his longest article, about five or six years ago, called attention to the fact that intermittent claudication he would regard as angio-sclerosis, that Reynaud thinks it angiosclerosis, that erythromelalgia was a neurosis and that instead of a spastic condition there was rather the opposite, so that when the foot was down the dilators of the vessels, or the constrictors were paralyzed so that increase in color and even in temperature of the parts could be made out. Oppenheim, it was believed by the essayist, called attention to the fact that there was probably a marked spastic condition in these cases, and even Erb, who is inclined to call the disease a dysbasia angio-sclerotic, thought the same. One must assume a spastic condition to account for the bloodless condition and for the pain and gangrene sometimes met. An X-ray was taken of this foot, thinking to discover some sclerotic condition of the vessels, but it was entirely negative.

Asked by **Dr. Billings** as to the effect of the dilators, **Dr. Herrick** said that nitro-glycerine gave him relief from the pain. Perhaps he had not been justified in not having given strophanthin, as he had wished the case to be seen as it was. Digitalis would be indicated, but it has a tendency to contract the vessels. If the heart beat could be materially strengthened, it would seem that some material good might be derived. Erb, in his case, had a great deal of good from strophanthin as well as the use of warm foot baths, electricity and iodines.

Dr. Mettler asked as to the effect of extreme cold and heat. The patient said he was worse in cold weather. Dr. Mettler said he had seen the statement some place that the difference in one of the symptoms in arthro. and Reynaud's disease was the difference in the sensations produced by extreme cold and heat. In the former cold gave the relief, while the reverse was the fact in Reynaud's.

Dr. Herrick said he mentioned the race because Oppenheim is inclined to think the neurotic element plays quite a part, and he says the Hebrew race is notoriously neurotic, and he thinks that is why such a large per cent of those who have this disease are Hebrews. Erb lays great stress on tobacco. Another point, this man has a right inguinal hernia, and in one case the wearing of a truss was regarded as having something to do with the obstruction of circulation. The rectum is entirely negative, which ought not to be overlooked, as there might be pelvic conditions causing obstruction to the vessels.

Dr. Chas. L. Mix said it reminded him of a case of his own, a man 72 years of age, who had chronic interstitial neuritis and a certain amount of arterio-sclerosis. It began as this, with pain in the great toe, followed by whiteness of the toe and ulcers at the inside of the nail. He did not lose the nail, but came about as near as this patient. In his case the foot was better when elevated. The pain was worse at night than in the daytime. He liked warmth, and the room was kept hot and clothes heated on an oil stove and put on constantly to give relief. The pain was intense. At one time the necessity of amputation of possibly the whole leg on account of the gangrene which seemed to be approaching was considered. He was given nitro-glycerine, spartein and antropin. He was on iodide of soda also continuously, and in the course of five months made a recovery. He had remained well and had no return of his intermittent claudication.

Dr. Wiliams asked if there was indication as to whether the etiology of the dilatation of the heart was myasthenic. The attack of pain which was suggested as having been angina might have been due to either factor, and the feebleness of the pulse everywhere is not like the condition met in cardiac myasthenia, and yet there is no condition in the vessels, as far as can be seen, to make one think of cardiac degenerations. The pathology in this puzzling case may be elucidated to a slight degree by the treatment. Attention was called to a paper by Thompson of New York on the effect of different drugs on relaxation of arteries, in which most remarkable results were secured by small doses of aconite, where the nitrates failed.

Dr. Herrick said his plan was to give strophanthine to improve the cardiac tone. Erb calls attention to the local trauma occasionally present in these cases. One was the case of a well-to-do man who about 60 days in the year went fishing in the mountains and waded for hours through the cold mountain streams fishing for trout. He thought that determined the excess-

ive degree of sclerosis in the foot. Dr. Bevan had called the essayist's attention to the fact that Dr. Gunn in his lectures, when he would meet with a case of Pott's toe, would refer to the fact that "this man complains of the tire in his legs, which is the tire of approaching gangrene."

Dr. Mix thought the fact that the pain is worse at night had some bearing on the etiology, as pointing to an increase in pain at the time of a decrease in the amount of arterial pressure, and the same had occurred in his case, i. e., the maximum of pain at the minimum arterial pressure.

A case of Ophthalmoplegia with implication of the motor branch of the fifth nerve was also shown by Dr. Herrick. The patient, 32 years old, came to Presbyterian Hospital three weeks ago. There is a negative family history, and her personal history rather uneventful with the exception of a removal of a mass of supposed tubercular glands from the left side of the neck ten years ago. She also has had several attacks of tonsilitis. The 10th of November of last year she worked in a cold room, bending over packing a trunk, and took cold. She felt well on retiring, but on awakening noticed that she could not open the left eye, had quite a severe pain in the left side of the face, the jaws were stiff and she could hardly open the mouth. The severe pain in the left side of the face lasted some time, as did the stiffness of the jaws, but with a relaxation of the jaws the pain disappeared but she did not again regain the ability to open the eye. She has had no difficulty in swallowing, in talking, no trouble in seeing out of the right eye; taste, so far as she could tell, was perfectly normal. It is to be seen she has a marked ptosis on the left side. She can wrinkle the forehead and the movement of the facial muscles is perfect. The left eye is in a completely immobilized position, with the slight exception that when asked to look down there seems to be the least bit of a motion with a slight rotation—a tiny motion of the superior oblique; this has occurred since her stay in the hospital. On the first examination there seemed to be absolute loss of all motion in all the eye muscles. There is complete absence of the reflex or contraction of the iris for distance and for light. There seems to be a very slight consensual reflex. The ciliary accommodation is entirely gone. With the right eye she can read fairly well, sees at a distance, but as things come nearer they appear less distinct. Examination of the retina shows slight pallor of the right disc and more marked pallor of the left, and Drs. Hotz, Brown-Pusey and E. V. L. Brown agree there is some pallor of the disc. It was also found the color field was narrow for green. The paralysis of the third, fourth and sixth seems to be complete, with the exception of a slight power of control over the superior oblique. It will be remembered that at the beginning of the attack there was quite severe pain in the left side of her face, seeming to be some irritation of the sensory fifth; also difficulty in opening the jaw, irritation of the motor fifth. Now there is loss of power of the motor fifth. Sense is perfect. When asked to close the jaw the masseter on the right side bellies up fully, but not on the left side. The same is true of the temporals. On opening the mouth wide there is a little deviation to the left, the whole jaw being drawn a little more to that side. There is a little sagging of the floor of the mouth. There is a trace of albumen in the urine. Since the onset of this trouble she has had one or two attacks of tonsilitis, but none preceding this attack. There was no fever at the time of her taking the cold. However, the next day after the onset she vomited, and some for a couple of days thereafter.

The lesion would appear to be in the lower neuron, either as a multiple neuritis or some pressure at the base of the brain as from the pons or a nuclear disease—the latter being most probable. If it is agreed that she has optic atrophy, the question can properly arise as to whether she has the beginning of some disease like multiple sclerosis and that this is but an incident of multiple sclerosis. The knee jerks are present and her station is good.

In discussion of this case, **Dr. L. F. Barker** said that while interested in the case which he had been permitted to examine, he was not ready to make a full and positive diagnosis, but he had ideas which he was willing to express merely tentatively. Five or six possibilities may be thought of. First, some infection or intoxication may have caused a nuclear disease or a neuritis; the acute onset, the albuminuria, the recurring tonsilitis and the fact that she has a little fever every day, though the temperature has never been higher than 99.8, suggest this. The leucocytosis amounted to only 11,000. Cases of ptosis and ophthalmoplegia something like this have occurred after common colds, rheumatism, influenza, diphtheria, and tubercular meningitis. As the essayist has said, multiple sclerosis has also to be thought of, but another thing which should be borne in mind is the possibility of beginning brain tumor. In connection with the possibility of cold and rheumatism, there is a case reported by Raymond (1890) of a woman, aged 25, who caught cold and had paralysis of the left lower facial, then of the twelfth, of the motor fifth and sixth, and of two branches of the third nerve. Discs normal. Recovery in three months.

Another case is that of Michel (1872), a soldier 23 years old, who was attacked with pain in temples and dizziness; temperature 39.5. On the fourth day complete right oculomotor paralysis and hyperemia of the right disc; on the seventh day, pain in knee. The eye paralysis disappeared in eleven days, the rheumatism went on five weeks; the patient ultimately got quite well.

Of the cases of diphtheritic paralysis, one is reported by Futterer in 1896, not dissimilar in symptoms to the one before us; there was complete oculomotor paralysis, followed by complete recovery. There is no evidence that the patient Dr. Herrick shows has recently had diphtheria. And moreover it is very unusual to have in diphtheritic paralysis any involvement of the sphincter of the iris. Besides there has been no palatal paralysis in this case.

Of the influenza cases accompanied by ophthalmoplegias, one case is reported by Gutman (1890) with right ptosis and right internal and

external ophthalmoplegia and aortic insufficiency; and one still more like the case before us by Schirmer (1890) in which there was right ptosis, prominent eyeball, total right-sided ophthalmoplegia, right pupil rigid to light and accommodation, the eye-ground normal; vomiting, headache and diminished sensibility in right half of face were other symptoms; the tongue deviated to the right, as in this case, and the masticatory muscles were weak on the right side. This case of Schirmer's is almost identical in symptomatology with the case Dr. Herrick has just presented except that in the present case the optic discs are pale.

Of the cases of tubercular meningitis which have presented similar symptoms, Seitz (1874) had complete right oculomotor paralysis coming on suddenly, as the first sign of the disease. The autopsy eight days later showed the right pedunculus cerebri to be red externally and softened, and the right oculomotor nerve friable. Kahler (1887) had a case of complete oculomotor paralysis in a woman of 36; eye grounds normal; temperature 38 degrees; slight stiff neck; later paralysis of the left seventh nerve. Tubercular meningitis found at autopsy.

Among the recorded cases of multiple sclerosis I cannot find a case like this. There are cases of eye muscle paralysis reported, it is true, but no one at all similar to this symptom-complex which Dr. Herrick's patient presents.

Certain cases of tumor cerebri in the literature resemble closely in symptomatology this case. For instance, Sir Charles Bell had a patient with left ptosis, rigid bulb, dilated, rigid pupil, anaesthesia and neuralgia of the left side of the face, neuroparalytic keratitis, paralysis of the masticatory muscles on the left side, left eyesight poor, and temporary paralysis of the seventh nerve. The autopsy revealed a tumor in the cavernous sinus lateral to the foramen for the meningeal extending forward as far as the superior orbital fissure artery. In this case the 3d, 4th, 5th and 6th nerves were included in the tumor and were atrophic. The 2d nerve went over the tumor and was gray. It would be easy for the chiasm to be affected there. A lesion in the same situation could account for the symptoms in the Herrick's case very well.

Turck (1855) had a patient, 34 years of age, who 4 months before death suffered from violent pain in right supra-orbital region which was followed the next day by right ptosis and almost complete paralysis of the right oculemotor nerve. The autopsy showed a tuberculous dura compressing the ophthalmic nerve and the right half of the chiasm, and there was infiltration of the right oculomotor.

Rosenthal (1886) had a case of left ptosis, double choked disc, partial left ophthalmoplegia, anaesthesia of the trigeminus, due to a tumor, the size of a bean, involving the left gasserian ganglion, oculomotor nerve and cavernous sinus. sinus.

Mingazzini reports a case in a man of 30; left nosebleed; left tinnitus; left headache; left ptosis; and later complete left internal and external ophthalmoplegia; left pupil wider; vision of left eye impaired; paresis of the muscles of mastication on the left side of the face, with hyperaesthesia of the left side of the face and pallor of the left optic disc. Sarcoma from the antdum of Highmore, including the turbinateds and the left sphenoid bone, infiltrating the sella turcica, and extending toward the clivus.

The evidence from the literature then is in favor of a lesion in this case of Dr. Herrick's in the region of the cavernous sinus, probably under the optic nerve involving the motor part of the 5th, the 3d, 4th and 6th nerves there. Whether a localized meningitis (tubercular or other) or a neoplasm I will not attempt to say, but I think it most likely one of these two.

In reply to a question from Dr. Williams as to whether in any of these cases there was such an acute onset, Dr. Barker said that in one the paralysis was sudden and complete at the beginning. In some of these cases the tumor developed for sometime before any of the acute symptoms particularly referable to the nerves appeared, and then the nerve symptoms came suddenly. Tubercular disease is likely to produce a sudden change from the fact that it causes thrombosis of the small veins which will often result in a hemorrhage, which causes the actual paralysis.

Dr. Herrick called attention to the connection of the removal of glands from neck in this case, which he had tried to reconcile with the acute onset and the utter absence of symptoms preceding it. There was no history of lues.

Dr. Mix asked if there would not necessarily be signs of involvement of the ophthalmic division of the superior maxillary division of the fifth if the lesion were where Dr. Barker thinks it is. They lie in the cavernous sinus and tumor at that point would involve the 6th nerve, the 3d and 4th and the two upper divisions of the fifth as well as the inferior maxillary as it goes through the foramen ovale.

Dr. Barker said that the cases in the literature showed that these could escape.

Dr. Herrick said she was on antispecific treatment now, and the patient said the medicine was the same as some she had taken before.

Dr. Billings said he had a case like this in the hospital, in which there was a left ptosis with ophthalmoplegia, and fixation of the iris; the ciliary muscles seemed to be normal. She had a marked superior orbital neuralgia and great tenderness over the left temporal region but no other involvement of the 5th. The symptoms entirely cleared up under iodides.

Dr. Moyer had seen a case almost identical with this at Bellevue, which was found to be osteo-sarcoma. The probabilities, he thought were that this case was the same, because if due to specific infection it would present other features by this time. It was either tubercular or a new growth.

A cured case of myasthenia gravis was presented by Dr. Harold N. Moyer. The case had been shown to the society in October of 1902, when all had agreed that it was a true case of myasthenia gravis. Dr. Moyer had first seen the case in August of that year, when he had been sent to him by Dr. Pusey, whom the patient had consulted on account of trouble with his

eyes. He could not focus the two eyes and had drooping lids. Subsequently his weakness extended to his arms and to his legs, so that he was shortly spastic all over. He was worst from about the 15th of December 1902 until the 10th of February, 1903. He could not completely dress himself during that time and was almost helpless. He could not eat solid food, which he could neither masticate nor swallow. He could walk about the room but could not get on his feet without assistance. His improvement when it began was slow, but steady. He seems now as well as ever, but has slight weakness in fingers in the way of grasp, the dynamometre showing 15 with one hand and 30 with the other. The legs are all right and the vision is all right. The eyes did not move from the middle of August 1902 until the middle of February 1903. The amelioration of his symptoms began 2 years ago and he has considered himself well for a year and a half. He walks from a mile to three miles every day, and could easily do five miles a day. He can now use the typewriter, which he had been obliged to give up. He has no sensory symptoms. When the patient was presented he had the general symptoms of coated tongue, and general failure of elimination, but never any rise of temperature. He had every symptom of typhoid fever without the fever. these have all passed away. At one time during his illness he had trouble with breathing which he attributed to some treatment he was using. He could not get out of his chair, and had to call for help. Dr. Moyer had made a diagnosis of myasthenia gravis from the symptoms when sent to him by Dr. Pusey. He had shown patellar reflexes, but these would soon exhaust, one or two strokes being all that could be elicited. He first noticed improvement in February, exercised about the house until April, when with the assistance of a friend he tried to get a few blocks to the barber shop, but had to stop and lean on the fence for support after going a short distance. In July he had gotten so he could go around without assistance. The treatment given by Dr. Moyer had been nitrate of strychnine.

Dr. Billings asked if it were surely myasthenia gravis, and if there were records of cases cured in so short a time.

Dr. Moyer replied that no one who had seen the case had a doubt of the diagnosis. While cases had ben reported cured, none had been reported cured for so long a time. He was so bad during the winter that it was not expected he would live through the summer. A prety fair reaction could be elicited for one or may be two jerks, and then would go right out. Asked as to the nasal smile, it was said this did not exist, but the features were mask-like, a fixed, expressionless look, and the eyes did not turn. He would look about by moving his head.

Dr. Julius Grinker presents a case of **pachymeningitis cervicalis hypertrophica,** simulating syringomelia.

Case.—J. W. B., aged twenty-six, male, colored, single, electrician, came under my observation Jan. 28, 1905. His father died by accident at the age of forty-seven; his mother died of an unknown cause at the age of twenty-two. He was the only child. The grandparents reached old age. No tuberculosis, carcinoma or nervous disease are found in his family record. His habits were always good. He never drank, nor smoked to excess. Of venereal diseases he had a mild case of gonorrhoea, but never syphilis.

The patient was well up to the age of twenty-one, at which time he developed dysentery while serving as a volunteer in the Spanish-American war. One year later he was sick with typhoid fever and cerebro-spinal meningitis. He states that during the acute stage of his illness he suffered from fever and stiffness of the neck muscles. For a period of thirty days he had pains in his back, left leg and left arm. The pains were sharp and shooting, like neuralgia. When, at the end of the month, they had entirely disappeared, he entered a period of ill health which lasted about three months. During this time he was weak and unable to work. Within four months after the beginning of the disease he could resume his usual occupation, and boasts of having been able to carry a sewing machine up a flight of stairs. Even at this time he complained of one symptom that annoyed him since the termination of the acute stage of the disease, namely; that the sudden turning of the head would regularly cause him to become dizzy. This symptom lasted until two years ago.

About four-and-a-half years ago, that is, about one year after this attack of typhoid fever and meningitis, he experienced a peculiar feeling in his left had and left leg which he described as a "tight, sleepy feeling," which was accompanied by muscular weakness which gradually grew worse. On the left lower extremity this paresthesia involved the foot and the leg to halfway between the ankle and knee. Five months later the right hand became similarly affected. He never experienced any abnormal sensations in the right lower extremity. One year after the onset of the paresthesia the right hand improved, but the left-sided numbness continued. There was in addition a dragging sensation and weakness of the back and left leg, which was always worse when the patient walked up a flight of stairs. In September, 1901, while the patient was marching with his regiment, he was unable to obey his officer's command for "quick-step," his feet seemed to stick to the ground.

In 1902 the muscular weakness in both hands became more pronounced. For the past two years he has been unable to raise his hands over his head, and he noticed that his shoulder girdle had become very weak.

Two years ago the patient scalded his left hand with hot water, which he did not feel but which blistered his skin considerably. The vesicles disappeared after a time, but new crops of vesicular eruptions continued to come, which were rather slow in healing.

Bladder disturbances began very early in the disease and have continued ever since. He cannot hold his urine very well; if he fails to empty his bladder frequently, there is an overflow of its contents. Constipation and sexual indifference amounting to impotence began at the same time, although up to one-and-a-half years ago

he still had desire but no power. Now even his sexual libido is in abeyance.

The weakness in his hands and his left leg and foot, which has been diagnosed by various physicians as hemiplegia, lead paralysis, multiple neuritis and hysteria, has of late entirely disabled him from following his occupation. Of his sensory disorder he is entirely ignorant and it is chiefly on account of his trophic disturbance that he seeks our advice.

Status Praesens. The patient is a well-nourished boy, of about five feet six inches in height, and about 145 pounds in weight. His gait is somewhat spastic, but his left side is worse, resembling very much hemiplegia. The left hand is the seat of trophic disturbances. Upon the dorsum are seen two large blebs and a generalized puffiness with oedema. The third and the little fingers present deep ulcerations on their dorsal surfaces, which are fully two inches long. Evidence of former vesicular or pustular eruptions are seen over various portions of the body. The face is symmetrical, the palpebral fissures are of equal size; the pupils are equal and react well to light and accomodation. There is no abnormality of the eye muscles, no nystagmus, no optic atrophy, nor optic neuritis. The tongue does not deviate. The right hand shows a considerable flattening of the palm and some wasting of the extensors on the dorsum. Flexion and extension, adduction and abduction of the fingers are still possible, but below normal; in the wrist flexion and extension are very weak. The left hand is almost paretic, and atrophies cannot be seen on account of its puffy condition. Flexion, and particularly extension of the wrist, are greatly impaired. In the left foot dorsal flexion is almost impossible; the muscles are atrophic. Although the patient considers his right foot perfectly norwal, a similar weakness and atrophy of muscles is observed, which is less marked than on the left side. The lower extremities appear spastic upon passive motion.

The left thenar and hypothenar eminences are rather soft and flabby, the lumrical and interossei muscles are extremely weak. The left triceps has almost entirely disappeared. The right triceps is present, but weak. In the right hand pronation and supination is possible but below normal. Supination is impossible in the left hand. Wrist extension on the right side is slightly reduced; on the left side, impossible. The pectoral muscles appear atrophied in their upper portions; adduction of the extended arms can be easily prevented. The deltoids, anterior and middle portions, are well developed, but the posterior portion is defective bilaterally. The upper portion of the trapezius muscles is bilaterally well-developed; part of the middle and the entire lower portions are defective. The serratus magnus has completely disappeared on both sides. The paralysis becomes very marked upon an attempt to abduct the arms, or to raise the arms above the horizontal position, which later is entirely impossible. When the patient attempts to extend the arms forward the scapulae project wing-like from the thorax, so that the observer can place his hands between tihe scapula and thorax. When the arms are extended outwards, the inner borders of the scapula touch.

An electrical examination of the weak muscles yields response to both currents, but the quantity of current required for some of the muscles is enormous. Besides the quantitative changes I have been unable to detect either the partial or complete reaction of degeneration in any of the muscles, and it goes without saying that there is no response over muscles that have entirely disappeared. The palpable nerves are not enlarged.

Reflexes. The superficial reflexes are present and of normal intensity, with the exception of the scapulo-humeral bilatterally and the left plantar reflex, which cannot be elicited. Of the **deep** reflexes, those for the upper extremities are abolished, the knee-jerks and Achilles jerks are equally exaggerated. Babinski and Oppenheim signs are absent. There is no tremor but a flickering in the affected muscles can be plainly seen. There is no ataxia of station nor of gait.

Sensation. The **tactilo** sense is involved in certain areas. The dorsum of the left hand is entirely anesthetic, otdher areas are hyperesthetic; that is, the lightest touch with a wisp of cotton cannot be felt, but a touch with a coarse object, such as the finger or test-tube, will be perceived. The sense of **position** is approximately normal. The **pain** sense is disturbed. The temperature sense was tested by means of test-tubes filled with hot and cold water.

In a general way the disturbances of the temperature sense, both for heat and cold, are found in the same areas, although there is greater disturbance for heat than for cold.

Vasomotor disturbances are not apparent; perhaps because the patient is colored.

This corresponds in many phases with syringomyelia. The tactile sense is slightly involved, or not at all. Some will no doubt still claim this is syringomyelia. That has the trophic disturbance, the motor disturbance, but we know since Charcot described his disease that we can get the picture from compression. That is what is now called meningomyelitis. In pachymeningitis cervicalis hypertrophica it is usually stated that there is spasticity of the lower extremities, bladder involvement, rectal disturbance and sexual disturbance, but no atrophy, showing that some portion of the cord lower down must have been involved. I believe that we have to deal with meningomyelitis which began in 1900, went through three typical stages, a painful stage, a stage of ill health and the last stage of ascending and descending degeneration. His reflexes are all gone in the upper extremities. He has a great deal of spasticity and a degree of ankle-clonus, but not well marked. The Achilles jerk is very proscribed. His sphincter reflexes are present below but not above. No Babinski and no plantar reflex. The Gordon reflex is obtained, but the essayist is not sure of its reliability. He has the peculiar sensory disturbance, the trophic disturbance, pain, and no history of syphilis, no tuberculosis in family, slow onset, three periods, bladder disturbance, sphincter disturbance. I think it is pachymeningitis cervi-

calis hypertrophica simulating syringomyelia or a case of chronic meningomyelitis. Strobe takes a decided stand against the former. Says it is not always confined to the cervical region, there is not always a hypertrophy. The author thinks many of the cases reported as syringomyelia will, on close examination, be found pachymeningitis cervicalis hypertrophica. The eye seems perfectly normal. The sensation of the bladder is fullness, and he knows he has to pass water, consequently there cannot be anaesthesia there, but there is incontinence. He never passes water if he can help it. The sphincter symptoms in connection with the other are explained by the compresson of the cord below the cervical area. It is known that the fibres come from above. There is secondary degeneration of everything below, therefore we get a spasticity, exaggerated reflex because the pyramidal tract has been involved in a myelitis and one beyond the cervical region. In Charcot's disease there is a period of irritation, and after that a period of degeneration, followed by anaesthesia.

Dr. Barker asked as to the patient having been in the tropics. **Dr. Grinker** said he had been in Cuba. In leprosy the anaesthesia appears in patches and never in glove shape as in this case. In leprosy there is no exaggerated reflex. There is not a symptom of anaesthetic leprosy. He has no sign of it, and then the face is always involved.

Dr. Moyer said he saw nothing in the case inconsistent with anaesthetic leprosy as he understood it. The root symptoms, the meningitis, he had.

Dr. Grinker said this argument was sound, but that most of the books say that in that case the anaesthesia occurs in patches.

Dr. Barker asked how the glove patches were reconciled with root lesions or cord lesions. That has been given as belonging to the segmental, and that we cannot answer.

Dr. Grinker said that in the meaning of the German word, this could not be reconciled, but in the meaning of the French word, "Segmentaire" it was.

Myo-Clonus Multipled.

This case was presented by Dr. O. M. Steffenson, who stated that the patient was a male; aged 26; married; born in United States. The family history was completely negative. Patient had suffered from measles at six years of age, and had made good recovery. He had been engaged in prize fighting from his 17th to 21st year of age. Five years ago he fell on his back from a scaffold 15 feet high, but apparently sustained no severe injuries, going back to work within a few days. Ten days after the accident he noticed tremors in the arms, legs, eyelids and various skeletal muscles. These tremors or clonic contractions were bi-lateral, varying in amplitude and frequency, averaging about 90 per minute and appearing intermittently. They may come spontaneously, but usually from some voluntary act, such as mastication, yawning, etc. This condition was more pronounced on the left side; the sensation was perfectly normal, the reflexes somewhat increased, especially on the left side. There was no weakness of any muscles involved, neither were there fibrilary tremors or changed electrical reactions. The movements have sometimes thrown patient from his seat. They were not present during sleep. The patient appeared mentally depressed.

CHICAGO SURGICAL SOCIETY.

A regular meeting was held March 6, 1905, with the President, Dr. L. L. McArthur, in the chair.

Dermoid Cyst of Lung.

Dr. Nicholas Senn reported a case of dermoid cyst of the lung, saying that thus far there are only sixteen cases on record. This is an unusual and very rare surgical affection. The patient, C. R., a male, aged 23, American, unmarried, a railroad man by occupation, entered the out-patient department of the University Hospital, Michigan, July 19, 1904. The case was very carefully studied there, and a history of it very accurately reported by the attendants at the clinic, and particularly by Dr. Roger S. Morris, to whom Dr. Senn was indebted for a complete history of the case. When the patient entered the Presbyterian Hospital, Chicago, the speaker had no idea that the case had been so thoroughly studied. The history of the case as related by Dr. Morris is as follows:

The patient entered the University Hospital, July 19, 1904, when I first saw him with Dr. Ellis. From certain points in the history, which will appear presently, together with the result of the physical examination, I diagnosed the condition as probable dermoid cyst of the thorax, though unaware at the time of similar cases. The patient, a resident of a neighboring town, was unable to remain at this time, but was advised to return. This he did. On July 27, 1904, he was admitted to the medical ward, and the following history was obtained:

On admission the patient complained of cough, expectoration of large quantities of foul-smelling sputum, and hemorrhages from the lungs.

Family History. Father is living and well. Mother has had "stomach trouble" nearly all her life, but is in good health at present. The patient has two brothers and three sisters who are alive and well. An aunt on the father's side died of "hemorrhage of the lungs and dropsy;" nothing more definite is known of her case. Otherwise the family history is negative.

Personal History... As a child, the patient was very well. He had measles, chickenpox, and a mild attack of diphtheria or tonsillitis. In all instances recovery was uneventful. At the age of 12 the patient had a diarrhea which persisted for about a year. Since then the patient has enjoyed good health until the onset of the present trouble.

History of the Present Disease. About nine years ago (eight years, according to out-patient history), that is, about the time of puberty, the patient had a severe attack of pneumonia on the left side, followed by a feeling of tightness across the chest and pain on breathing. The latter was localized to an area about the size of a hand in the precordial region. Prior to the attack of pneumonia the patient says

he was struck over the heart by a drunken man, and ascribes the pneumonia which soon followed to the blow which he received. Between the time when he was struck and the development of the pneumonia, he had severe neuralgic pains in the region of the heart and in the left shoulder. A year later the patient had another attack of pneumonia, which lasted about eight weeks. During a coughing fit, a large quantity of "pus" was coughed up at one time ("over one quart.") The "abscess" or "empyema" discharged three times in the next three or four days. The patient describes the so-called pus as a "yellow, semi-fluid material." After raising this material, the patient became much better, but has coughed and expectorated a good deal ever since. Four years ago the patient had a very severe hemorrhage from the lungs, and since then he has had one about every six months. The last one occurred just before the patient returned to the hospital. At times the hemorrhages amount to about one pint. During the last three years the patient has noticed a "rotten" odor to the sputum. In March, 1904 he went to Colorado for his health. He was examined by a physician, and told that he had empyema. Operation was advised. This the patient did not submit to. No tubercle bacilli were found in his sputum at this time. For some time the patient has coughed up hairs in his sputum; these are from one to six inches long. Since last March there has been some soreness over the right side of the chest. Expectoration is much more profuse when the patient is lying down. He has not lost weight.

Status Praesens, July 29, 1904. Temperature has been normal since admission, respirations 20, pulse 72, regular, of fair size and tension. No palpable thickening of the arteries. Patient looks very well nourished. Active dorsal position. Mind clear. Build rather short and stocky; strong frame; panniculus fair. Muscles well developed and rather soft. The skin is of good color, smooth, dry, and elastic. No edema of ankles. There are no stiff joints. Lymph glands about left clavicle and behind left sterno-cleido-mastoid are slightly enlarged; otherwise negative.

Expression is negative. Pupils are equal, react well; sclerotics are clear, slightly bluisn. Conjunctivae and lips are of good color. Teeth are in fairly good repair. The tongue is large, clean and moist. Examination of neck negative. Thorax is well formed, rather large. The left side seems slightly fuller than the right. The epigastric angle is about a right angle. Expansion is rather small, slightly less on the left side, especially on deep breathing. The difference is more noticeable in the lower part of the thorax. The clavicles are equally prominent. On percussion the apices are of equal height, about one and one-eighth inch above the clavicles. Above the second rib the percussion note is the same on the two sides. Below this level the note is somewhat hyperresonant on the right, with relative dullness throughout the left front, the upper border of the relatively dull area sloping downwards and backwards into the left axilla. Traube's space is clear. There is no absolute liver dullness. The lung liver border is on the sixth rib in the right nipple line; it extends straight around. The lung descends to the seventh rib on deep inspiration. Auscultation above the right clavicle gives rather harsh vesicular breathing, with fairly high-pitched sybilant rales on inspiration; below the clavicle throughout the right side there is moderately strong vesicular with no adventitious sounds. Above the left clavicle the breath sounds are obscured by sonorous bronchi which are heard both on inspiration and on expiration. Below the left clavicle there is harsh vesicular accompanied by dry rales of medium pitch, the vibrations of which can be felt on palpation. Below a line drawn from the anterior axillary fold to the left nipple the vesicular is very weak, and toward the end of inspiration a few crepitant rales are heard. The ausculted spoken voice is slightly weakened between the second and fourth ribs on the left; vocal fremitus unaltered here. Posteriorly, the apices are of equal height on percussion. Below the level of the spine of the eighth dorsal vertebra there is relative dullness on the left side; this is continuous with that previously described in the axilla. In other respects percussion of the back is negative. The upper border of relative dullness does not move with change in position of the patient. Auscultation reveals fair vesicular throughout the right back and on the left back down to the dull area, where the vesicular is weak and distant. Pectoral fremitus is slightly weaker on the left side over the same area. Auscultation of the spoken voice is negative behind. The apex of the heart is best felt in the fourth intercostal space in the nipple line. At the beginning of the examination a pulsation was seen in the second and third interspaces, which was forcible enough to be palpated. Absolute heart dullness begins on the fourth rib and extends outward to the apex; on the right it extends to the left sternal line. The relative heart dullness cannot be separated from that obtained over the left lung. The heart sounds are moderately strong and clear. The second pulmonic is reduplicated and accentuated. Abdomen is on a level with the ribs. It looks natural. The walls are quite resistant, making palpation difficult. Spleen and liver are not felt. Percussion is negative. Leucocyte count, 9,256 on July 27, 1904. Urine examination was negative. Sputum was examined July 31, 1904. The color was whitish-gray. Sputum had a foul odor, like that of "bad" eggs. It separated into three layers. No tubercle bacilli were found; no elastic tissue. Later a hair was found in the sputum. Fluoroscopic examination shows a slight shadow throughout the left side above. Below the level of the eighth dorsal spine and extending to about the level of the eleventh dorsal there is a diffuse dark shadow, as dark as that from the liver. The entire right side is clear. A skiagraph was taken; unfortunately the negative was poor."

Dr. Senn stated that this clinical history was very full and accurate, and corresponded exactly with what he had found on careful examination of the patient repeatedly after his entrance to the Presbyterian hospital. The patient coughed up during his residence in the

hospital for a number of weeks six or eight hairs. These hairs were very thin, lighter in color than the hair of the scalp, and varied in length from one to six inches. Sometimes, when patient expectorated these hairs, he felt a certain sensation which he referred to the base of the heart. Expectoration, at times, had been very copious and fetid. The patient's general condition was excellent. There was no wasting, no cachexia, hence any suspicion of tuberculosis could be abandoned without giving the chest a careful examination. He had made use of the X-Ray in this case, and the skiagraph exhibited corresponded to what Dr. Morris had described in the clinical history. From the clinical history, the character of the sputum, the general condition of the patient, there was no difficulty in making an absolute diagnosis of dermoid cyst communicating with the lung. He resorted to a surgical operation for the purpose of exposing, if possible, and removing the lining membrane of the dermoid cyst. Clinical records showed at the present time almost invariably that these cysts had their location in the anterior mediastinum at a point corresponding with the location of the thymus gland. This was their favorite primary location. He therefore aimed in operating upon this patient to expose that portion of the mediastinum which is most frequently the seat of dermoids of the lung. He made a T-shaped incision, which remained well-defined by the scar which followed as soon as the wounds had healed, largely by primary intention. He made a transverse incision directly over the manubrium, and a vertical incision over the center of the sternum. As he wanted to trephine the manubrium at a point corresponding with the location of the thymus gland, he made another or second opening two inches lower down, after reflecting the cutaneous flap and periosteum, which were separated from the sternum, and united these trephined openings by the use of a chisel, thus making an opening more than two inches in length in its vertical diameter, exposing freely that part of the anterior mediastinum which was generally the seat of dermoid cysts. The moment he opened up the anterior mediastinum by cutting through the posterior layer of the periosteum, air entered forcibly. Hemorrhage was quite profuse. He enlarged the opening to correspond with the size of the trephine openings, and this exposed freely the anterior mediastinum. Owing to profuse hemorrhage, he packed the large wound with iodoform gauze, and allowed the gauze tampon to remain for five or six days, when it was removed, and when he anticipated, in all probability, he would find the remains of the dermoid cyst in the expected location. In this, however, he was disappointed. In removing the tampon he found that the entire part of the anterior mediastinum which was exposed lined fairly well with granulations. He proceeded to explore the floor of the wound with the probe, but no trace of the dermoid cyst could be found. The operation had not influenced the clinical course of the disease. Before resorting to operative measures, and knowing nothing about the previous history of the case, for the purpose of locating, if possible, the dermoid cyst accurately, he resorted to exploratory punctures. He found, as did Dr. Morris, an area of dulness corresponding with the upper segment of the sternum and at the base of the heart. He explored about an inch and a half from the left margin of the sternum and a little above the base of the heart to the depth of three or four inches, resorting to aspiration, gradually withdrawing the needle, but the result was negative. He found likewise a limited area of dulness which corresponded with the intrascapular region, that is, between the spinal margin of the scapula and the transverse process of the spine. In this locality he punctured, but with a similar negative result. The patient coughed now about the same as he did before the operation, so that the question arose as to what was to be done in the future. He exhibited the patient with a view of asking the advice of the members of the Chicago Surgical Society as to the course to be pursued in the future. He could do nothing more with the anterior mediastinum. The patient had a slight area of dulness extending over the base of the heart, with a similar area of dulness on the posterior surface of the lung. He thought he had to deal here with an exceptional case. In nearly all, if not all, cases of dermoid cyst of the lung it was found to take its origin in a location corresponding with the thymus gland. That part of the mediastinum had been thoroughly explored. Nothing was to be gained by repeating the operation in that locality. He took particular care to use a probe in all directions in search for a possible sinus communicating with the supposed original seat of the disease.

The question arose now, should he resort to costal resection at a point to which the patient referred his difficulty, namely, above the base of the heart, or should he, in view of the fact that distinct physical evidence of pulmonary complications, or, at least, pleural thickening over the posterior aspect of the chest had been found, operate in that locality? He had kept the wound open for a number of weeks with a view to studying repeatedly the condition of the anterior mediastinum, which was exposed by the operation. The arch of the aorta could be seen in the lower part of the wound. The operation wound had now completely healed, yet the patient was in the same condition as he was before operation.

Dr. Senn passed around some of the hairs which the patient had expectorated at irregular intervals. One of the hairs measured six inches in length.

He also reported cases of (1) echinococcus cyst of the lung; exploratory puncture; rupture of cyst. (2) Dentigerous tumor of superior maxilla. (3) Ligation of internal and excision of external carotids for malignant disease. (4) Disarticulation at the hip joint for sarcoma of femur and tubercular endovaginitis. (5) Extensive plastic of the face after operation for carcinoma of the orbit, nose and face. (6) Rectoplasty for extensive traumatic defect. (7) Scar carcinoma in the region of the great trochanter. (8) Fracture of humerus with posterior dislocation of upper fragment. (9) Secondary suture of ulnar nerve after gunshot injury.

The Surgical Treatment of Chronic Muco-Membranous and Ulcerative Colitis; with Special Reference to Technique.

Dr. J. E. Summers, of Omaha, Neb., read a paper on this subject by invitation. The author first discussed chronic primary colitis; then primary membranous colitis, and ulcerative colitis, and reported cases.

After referring to the work of Keith, W. Hale White, Deaver, MacEwen, Cannon and Lane, the author stated that in order to cope successfully with the different kinds of colitis the surgeon must, in so far as possible, be able to differentiate the cases and apply the surgical procedure to fit the cause. This is rather new surgery, but has a field of usefulness. Any form of colitis which has resisted careful medical treatment must be studied with a view of determining the cause and the reasons for the persistence of the cause. For surgical convenience he recognizes three kinds of colitis: (1) The inflammatory, due to the effect of some specific organism—an inflammatory disease commencing in, and mostly confined to, the colon. (2) An inflammatory condition secondary to an inflammation or derangement of function of the vermiform appendix. (3) An inflammation induced by mechanical interference with the peristaltic, and more especially the antiperistaltic waves of the colon.

The surgical treatment of colitis, if carried out in recognition of these causes, will be successful. To be successful, the type of operation must be selected with a view to meeting the pathology. It will not do to confine oneself in all cases to a right inguinal colotomy. This may have done for the class of cases for which it was first selected, but even in this class, which the author designates the bacteriological, the artificial valvular fistula operation suggested by Gibson of New York has many advantages, not the least being the annoyance of a large open fistula, and the inevitable loss of weight and strength which always follows the free external discharge of chyme as it comes direct from the ileocecal orifice. In his experience with the appendicular forms of colitis, there are two varieties—first, and most common, the explosive form, which is recognized in the first few hours by intense general abdominal pain, with tenderness over the appendix. In from six to twenty-four hours dysenteric symptoms develop, which may last some days, and then gradually subside or persist with moderate symptoms for several weeks. These attacks recur. The other form is of the kind described by Deaver. In the first kind the removal of the appendix is all that is required, as has been so in three of the author's cases. In the neurasthenic type of Deaver not only should the appendix be removed, but the Gibson cecal fistula ought to be established—the long-continued interference with cecal and colonic digestion by the abnormally functionating appendix has brought about changes in the mucosa of the colon that can only be cured by the rest and local treatment afforded through this fistula. If these simple means will not bring about a cessation of the discharges, and the impaired health which always accompanies them, then something further must be done. The colon must, in greater or less part, be excluded from the process of intestinal digestion and the function established gradually by the small intestine and the remaining portion of the colon. Operations for exclusion have undergone a remarkable evolution.

Drainage in Diffuse Septic Peritonitis.

Dr. Van Buren Knott, of Sioux City, Iowa, read a paper by invitation on this subject, in which he drew the following conclusions: (1) Operations for diffuse septic peritonitis should be made as quickly and with as little manipulation as is compatible with thoroughness. (2) Evisceration, partial or complete, greatly increases shock and the prospects of a fatal result. (3) The general use of clean hot water will most thoroughly cleanse the infected cavity with the least traumatism. (4) Drainage is simplified by collecting the peritoneal fluid at one point where drains may be easily placed. The elevated head and trunk posture followed by the gravitation of fluid to the lower pelvis best accomplishes this. (5) Results following the surgical treatment of diffuse septic peritonitis will be improved should each individual operator adopt some definite form of procedure in such cases which, being well understood by operator and assistants, may be methodically, speedily and thoroughly carried out.

These two papers were discussed jointly.

Dr. M. L. Harris said his experience as to exclusion of portions of the intestine had always been limited to exclusion with drainage into the intestine. He has resorted to this method in several cases in which the cecum and ascending colon were involved, and always with success. He has always made use of the method of dividing the ileum and transplanting it into some portion of the colon distant to the trouble which he sought to relieve. The colon was always left free, so that it could drain. He believes this is an essential feature, and thinks that complete exclusion of any portion of the intestinal tract should never be undertaken.

Dr. Jacob Frank said, with reference to exclusion of the bowel, in some of the cases reported before the Society, it was demonstrated that in that part of the bowel which was excluded there were masses formed from the secretions or excretions from the mucous membrane. These masses consisted of small balls of cheesy substance, filling up the excluded bowel. He does not think it is safe to close up both ends, as he has demonstrated this in dogs. He has specimens at home of these cheesy masses which he intended to exhibit at a future meeting of the Society.

As to Dr. Knott's paper, he had tried the method mentioned by him, and in two cases of diffuse septic peritonitis he filled the abdomen with salt solution, put the patients in the Fowler position, and used glass drainage tubes, sitting the patients up in bed with a back rest, and both recovered.

Dr. Daniel N. Eisendrath showed the photograph of an apparatus which has been in use in the Michael Reese Hospital for the past two or three years for the treatment of cases of diffuse septic peritonitis. This apparatus has

advantages over using tables, chairs, etc., as one can more accurately get the Fowler position. It is an advantage over propping up of the patient in bed, for those who have had experience with such patients know that in their weakened condition they would slip down. About a year ago, when he began to use the Fowler position systematically and to flush cases of diffuse septic peritonitis thoroughly with hot salt solution, using three to four gallons in each case, he changed his mortality from 100 per cent practically to a large per cent of recoveries. He cited three cases of diffuse septic peritonitis that had recovered from this treatment.

Dr. Alexander Hugh Ferguson said that in a spreading inflammation of the peritoneum one should not forget where the focus of the inflammation was when ne begins to drain. The Fowler position, which has been so much lauded and recommended, should not supplant every means of drainage of the abdominal cavity. He mentioned three positions from which the pus emanated that should not be drained by the Fowler position.

Dr. Knott, in closing the discussion on his part, said, with reference to the remarks made by Dr. Frank, he believes in the long run Dr. Frank would secure better results, afford more comfort to his patients, with less tendency to fecal fistula, by the use of soft rubber tubes than by the use of glass tubes.

Dr. Summers, in closing the discussion, said that his experience had been limited to eight operative cases. He did not know that Dr. Harris had been doing the operation of intestinal exclusion with drainage into the intestine. He was not aware of it, because Harris had not published his work.

With reference to Dr. Knott's paper, he would say that Dr. Knott was so thoroughly convinced of the utility of the plan advocated in treating cases of diffuse peritonitis, that he operated upon his own son, eighteen hours after an operation for perforative appendicitis by another surgeon. Dr. Knott had himself operated in the absence of a colleague, an acute peritonitis having developed. The extra-median incision, toilet and drainage established, saved the boy's life.

DOUGLAS PARK BRANCH OF THE CHICAGO MEDICAL SOCIETY.

Regular meetings are held on the second Monday evening of each month at Gads Hill Settlement; Roby and 22d St. Membership —.

Officers.

President.....J. Chase Stubbs, 971 W. 22d st
Vice-President.....J. F. Chvatal, 1593 W. 22d st
Secretary.....Clyde D. Pence, 1389 Ogden ave
Treasurer.....Wm. E. Miller, 1155 S. California ave
Councillor.....J. A. Clark, 832 W. 21st st

—

Shall the Physician Dispense?

Dr. J. A. Clark: This question cannot be answered off-hand to apply to all physicians. So much depends on the personal equation of the man, on his surroundings and influences. Knowledge of drugs—liking for the work, facilities for handling and making preparations.

Almost as well might we ask the question. Shall the doctor wear a certain style of hat or coat, drive a certain colored horse or use a certain make of automobile?

I shall make no attempt to speak in a dictatorial manner as to what is, or what is not best for all physicians. But I shall give some of the reasons why I believe it is best for the physician to do his own dispensing, some reasons why I think it is best for me, and why it is more satisfactory to me. After trying both ways; that of writing prescriptions, and doing my own dispensing.

I do not expect everyone to agree with me in this matter. I am very sure the retail druggists do not share my views; neither do all physicians agree that dispensing is the better system. Any one who has thought of, or investigated the subject at all must know, that in the last ten years the plan of dispensing has made immense gains all over this country, and that every year the number of physicians who are coming into this way of doing business is growing by leaps and bounds. For this fact there must be some reason.

As a basis for my remarks I wish to lay down some fundamental propositions. 1st. That no person should attempt to enter the ranks of our profession who has not a genuine love for his work and 2d whose entire efforts during all his professional life shall be to this end, that he cure his patients as quickly, as safely and as pleasantly as possible, and in incurable maladies to give the most relief from suffering, or as stated in the ancient oath of Hippocrates, which was taken by the physicians of old.

"I swear by Apollo the physician and Aesculapias, and health and all heal, and by all the gods and goddesses, that according to my ability and judgment I will keep this oath and this stipulation."

"Into whatsoever houses I enter I will go into them for the benefit of the sick, and I will abstain from every voluntary act of mischief and corruption."

In the 2400 years that have elapsed since that oath was written no code of ethics has ever been written which is any improvement upon it as a lamp and a guide for our direction. Some principles are eternal because they are right, and nothing ever has, or ever can change the fact, that the life work of the real physician is to labor for the benefit of the sick, and that practice is best which saves the most lives and cures quickest and safely.

The second main proposition I lay down is: That having done our full duty to our patients, our patients have a duty to perform towards us and we must see that they do it.

While the world may owe us a living, practically we have to collect it ourselves from the aforesaid patients. It is our duty to collect it for the benefit of ourselves and our families. Somewhere I have read that he who fails to provide for his family is worse than a thief.

I take it that we here, are all what are known as general practitioners: doing every thing that comes in a general family practice, and that we expect to live by giving service to these families year after year: we expect to hold

our families and have our business and our income grow by the good reports our patients give to their friends, and so form an endless chain.

I am sure that a very potent factor in holding our patients is by doing our own dispensing. You will find that the patient likes it better.

The first element of success is a satisfied patient. In all my life I have never had a patient ask for a prescription when I had the remedy with me to dispense, but times without number have they asked me to give them their medicine, and told me they had more confidence in the medicine when the doctor gave it himself. There was then no fear of substitution. The druggist, his clerks and some favored doctor have no chance to discuss the patient's disease, give unasked for advice, and retail gossip.

As most people are sensitive about their ailments, and as remedies often indicate the disease for which they are prescribed it breaks into the confidential relations existing between physician and patient to have the prescription discussed by outside parties.

By dispensing your own remedies you often save hours of time to your patient and gain the same number of hours in the treatment. This may mean saving a life in acute diseases. But last week one of my patients waited all day to have a prescription filled because the druggist was out of the remedy ordered, and had to send to the wholesale house for it. While I honor and respect this druggist for going to all this trouble to fill my prescription right, had the case been one of great urgency, likely my patient would have died before the medicine was delivered.

Dispensing saves your patients money. You all know that the actual cost of the drugs used in acute diseases amounts to only a few cents a day.

The complaints that were the most common to hear were about drug bills. The bill of the physician is often a small matter compared with the drug bill. You always know just what your patients are getting.

They are obliged to report to you instead of to the drug clerk.

They cannot get the medicine repeated month after month whether suited to their needs or not. You have absolute control of your patients and of your own business. You will use better drugs yourself than you are sure of getting at the ordinary drug store. The drugs you use are as much a part of your armament as your scalpel, your obstetrical forceps or your microscope and they should be much more carefully selected. You use drugs a hundred times where you use forceps once.

The best and purest drugs are none too good for my patients.

You have a better chance to watch the effect of your remedies and you will become a better therapeutist yourself.

Called to a case, you administer the first dose yourself, and watch the effect; often give two or three doses before leaving and many times the patient is on the road to recovery before your first visit is over. Your patients will recover from acute diseases in much less time. Your death rate in the same class of cases will be so much less than formerly that you will be greatly surprised.

Last month I was asked by a man whose family I have treated for many years, how my results compared now as with my former practice of writing prescriptions.

My answer was that now, in the same class of diseases, of the same average grade of severity, the patients recovered in from one-half to one-third the time it took under the method of prescription writing. The death rate has decreased in a much greater proportion.

I am entirely within the limits of truth, when I say, my death rate now, in acute diseases, is not over one-fifth of what it formerly was, and I attribute this improvement to using physiologically active drugs, those I can use with confidence and in whose activity I am not disappointed.

Up to about ten years ago I might have been classed as a therapeutic nihilist. I had been so often deceived and disheartened over the results from my prescriptions that I had come to believe that recovery was largely a matter of good nursing and vitality of the patient, and that medicine was of secondary or no importance at all, and that the only real results we ever got were in surgical cases. Gradually the idea came to me to do my own dispensing, to study up carefully the physiological effect of every drug used; then watch for the effect every time I prescribed a remedy, and if I didn't get the physiological effect to try and find the reason why I did not get it. I soon learned that the products from the different manufacturing and pharmaceutical houses varied tremendously, and while one remedy from a house would prove true to action every time some other drug from the same house would be practically inert. This happens with the drugs of most of the largest and best known manufacturing drug companies. Every firm has some specialty which no other house sems able to more than imitate though they try to produce the same.

Some time since I had a 10,000 bottle of hyoscyamine tablets made by one of the largest and oldest houses in the United States, but I could get no adequate effect from the ordinary doses. I soon learned I had to give five times the dose from this bottle that I needed to use with the same sized dose made by another house. Now had I been writing prescriptions for this remedy, to be filled at any drug store, how would I have known what dose to prescribe?

No matter how honest the druggist when he buys from an old reputable house, he can not be blamed. It is not his business to watch the effect of drugs he buys.

I have learned by sad experience that even when we have found the particular house making the best drugs, and specify that make, it is very seldom we get what is called for, and this is especially true when your prescription is made into a solution the opportunity for substitution is great in liquid preparations.

These objections might be met if the physician owned an interest in a store and controlled the buying, and if he could be sure all his prescriptions would be filled at this store. But the

courts uniformly hold that when a prescription is once delivered to a patient it becomes his property, with which he can do as he pleases; have it filled where he likes and repeated whenever he likes; all orders written by the physician about not repeating notwithstanding.

In the course of time most of us evolve some pet combination for certain diseases. These combinations are in the nature of private property. We do not particularly care to make them public property. Most of the millionaire patent medicine men made their money through pushing the prescription of some doctor.

I wonder how many drug stores there are in which some doctor does not have the privilege of going through the prescription files?

The only way to control abuses is by keeping our combinations in our own hands.

Again, many preparations can not be made extemporaneously. I am told by manufacturing chemists that it takes a month to make the ordinary comp. syr. of Hypophosphites. That it takes so long before it is fit to be put on the market.. I have for a long time used a modified hypophosphites in which the dose of lime is very much increased over the officinal preparation. Now if it takes a large manufacturing firm, employing the best chemists, and with every known facility for doing the work, a month to make a product they are willing to put on the market, what kind of a mixture would you be apt to get from an extemporaneous mixture put up in twenty minutes?

The following statement was recently made in a lecture before a body of prominent physicians:

"The reputation of the physician, and in equal measure his income are in the keeping of his pharmaceutical purveyor, and he is practically helpless except in that he can charge or control the source of supply at will." This truth is evident when it is remembered that the physician who writes the prescription seldom or never sees the medicine dispensed.

A case was recently told me of a young physician settling in a city near here.

Every prescription written by the new doctor was shown to all the older doctors in town and criticized to the public so harshly as in a short time to drive the young doctor out of town.

I do not mean to imply that all druggists are open to these criticisms. It is my pleasure to know some who are competent, conscientious gentlemen, but the exceptions are so numerous. I am not willing to trust either my reputation or my finances in their keeping.

The following taken from the Apothecary, a druggists journal, affords some food for thought:

"The facts revealed by the recent aristol investigation in Chicago are horrible in the extreme. Almost shattering ones faith in mankind. When 108 out of 139 supposedly reputable druggists are known to be criminally negligent if not willfully criminal it makes one sick with disgust."

These are strong words, but not so strong as the facts warrant. When a druggist, a pretender to professional standing, a claimant to at least ordinary intelligence allows Fullers earth colored with oxide of iron to go into a prescription for aristol, as many of these men did, there is no excuse for him. True most of the druggists assert they bought the stuff in good faith. That is, they admit they knew it was a substitute but thought it was just as good. Think of it! The pitiable spectacle a man makes in offering such an excuse. As another evidence of the extent this fraudulent stuff was sold it is said that one jobbing house in one day sold 429 ounces, more than before in months. If the fact that the investigation was being made had not leaked out it would have included every drug store in the city.

From government reports in the last Year Book of the Department of Agriculture, we read that from 50 to 75% of the medicines dispensed by the druggist are either wilfully adulterated or are of inferior quality.

Samples of laudanum varied 500% in strength and other drugs in the same proportion. The solid extract of Nux Vom should contain 15% of the alkaloid. Samples analyzed by Prof. Wulling contained not a trace of the alkaloid instead of 15% they should have had.

Did any of you ever examine and taste a large number of the ordinary fluid extracts and notice how much alike they all taste?

A peculiar bitter, stale, dirty taste entirely lacking in the special aroma and taste peculiar to the green plant. Instead of the extract being made from the recent herb it is more often made from the dried, inert plants gathered from any source, by anybody, at any time of the year. Plants from which the entire principal is evaporated.

Suppose a physician uses an extract like the above in gradually increasing doses and fails to get any effect. Is it any wonder physicians lose faith in drugs?

While I yield to no man in my appreciation of the benefits of deep study of pathology, bacteriology and chemistry of diseases, the practical end is the cure, and excluding surgical cases this must largely be done by the action of drugs. I am certain that the man who gives his own medicines will and does become a better therapeutist than the one who writes prescriptions. When you give a dose of medicine and do not get the result, you have no druggist to put the blame upon. You know your own supply is defective and you must change the source of supply.

Every agent who takes an order from me knows that prices have no effect unless their products are true to physiological action and they also know they can never sell me a second lot of any product not true in action.

I watch as I never did before the action of every drug I use and I am getting to be a very firm believer in the efficacy of drugs. I believe my experience is large enough so that I can make the statement that acute diseases are very much benefitted and shortened by treatment. I know it is contrary to some very high authority, but I am bold enough to assert that such diseases as pneumonia, typhoid fever and whooping cough are shortened and cured by drugs, prop-

erly given, at the right time, and in doses suited to give physiological results. The Lord pity the pneumonia patient who falls into the hands of a doctor who does not believe in treatment and has no faith in drugs.

I will go further and write myself down as enough of a heretic to say, that all cases of appendicitis not of the acute fulminating type, are relieved and cured by medical treatment.

I venture the assertion that the therapeutic agnostics in the profession today are all prescription writers.

As a result of German Nihilism many of the leading text books on the practice of medicine are but little more than text books on pathology. In looking through one of the latest and most popular works I was not so much surprised to read pages on diagnosis, etiology, pathology and then to find the treatment disposed of in a short sentence.

The question is often asked why medical students do not know more about therapeutics? It is true most of them are anxious to learn what to do for diseases, yet they are graduated without practical training in the use of remedies. Too little demonstration of the practical working of drugs either on animals or on patients is given.

The student is surrounded by three fires. The laboratory professor fires at him all day quantities of chemical unknowns, bottles of bacteria, and pathological specimens by the pound. The clinical teacher wants the student all day that the teacher may demonstrate his own brilliant surgery or deliver his lecture on history, etiology and pathology, and each specialist is sure the student should devote all his time to that particular specialty. Thus it comes that the only time the doctor learns real therapeutics is after he is in practice: at the bedside of his own patients and I maintain that he will learn very much more and very much faster if he supplies his own remedies, procured from a reliable source every time.

And after all, isn't it infinitely more satisfactory, more scientific, more in keeping with the doctor's high calling, to himself give such medicines as are needed for the really sick? Active remedies for serious conditions should be given by the doctor himself, and he should explain their use and the action that will result from their use. Thus you combine all the therapeutic efficacy of your remedy and add to it the powerful psychological effect of suggestive therapeutics.

There is a right way of doing things. It is quite evident that in medicine to write a prescription to be dispensed from an uncertain source of supply is not the right way.

To those who have had experience it is equally evident that besides dispensing of active remedies is the right way. No possibility of substitution or sophistication then; no uncertainty as to efficiency or potency.

Does it pay?

When we have done to the best of our ability, our whole duty to our patients, we must look to our own welfare. I know not how it is with others, but I know my families like the system of having the doctor do his own dispensing. There is an element of faith in medicine. Whether well or illfounded there is in the minds of many people a suspicion as to prescriptions being filled as the doctor directs. Among the poorer classes the item of drug bills in a long illness is a serious matter. In many a case have I seen the druggist get all the money the family had and I either waited a long time for my pay or never got it at all. I have never seen bills so easy to collect as since dispensing.

It is the best system I know of for making office consultations and visits cash. So many never think to pay cash for a consultation or a prescription, but when they also get a bottle of medicine or a box of pills, they feel they have received something of definite value that calls for payment on the spot.

You can get better fees for your work. It is the most practical way of raising fees. Thereby getting more for your own services and at the same time save your patients a great deal over what they would pay at the store.

The matter of experience is small. Contrary to general belief, we buy as cheap or cheaper than the druggist. He buys pills in lots of 100 to 1000. Those I use in any quantity I get in lots of 5,000 to 100,000. The difference in price between 100 lots and 100,000 lots will open the eyes of those who have never investigated. It will increase the business and cash receipts of any physician who gives it a fair trial.

Last year my collections were so nearly cash that I only had 7½ per cent of business done in 1904 to be collected at the end of the year.

If you don't want to lose your business, fit your office to do the work. There is a demand for business doctors. Those who make a business of their profession and all that pertains to it. The more business like the doctor, other things being equal, the greater will be the demand for his services and the greater his rewards.

Blessed is the man who makes two dollars grow where only one grew before, and no where is there more room for the extra dollar than in the doctor's pocket.

In conclusion: There are four good reasons why the physician should dispense; any one of the reasons alone would be sufficient:

1st. Your death rate is very materially decreased, thus saving more lives to the State.

2. From the use of better drugs, and the added interest you take in your cases they recover in much less time: a great economic gain to your patients.

3. Under all circumstances your patients like it better.

4th. It pays the physician by increasing his fees and by increasing his cash collections.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

A regular meeting was held March 7, 1905, with the President, Dr. William L. Ballenger, in the Chair.

New Knife.

Dr. Ballenger showed a knife of his own de-

sign for removing the cartilaginous septum. He also exhibited specimens which were removed by this knife, and said the method of removal with this instrument preserves the specimens in their entirety for study.

Plastic Operation for Stenosis of the Nares.

Dr. F. G. Stubbs: I have a case here which I wish to present, not that there was anything peculiarly difficult about the operation, or that there is anything that is specially rare; for many times in our practice we see cases of stricture of the naris, but when we see a case in which both nares are almost completely occluded, as in this case, I think it is more than of ordinary interest.

This young man is twenty-three years of age, and the trouble began when he was between one and two years of age. There is a history of hereditary specific trouble, and the probabilities are there were ulcerations in the nares. His eyelids were affected, so that some years ago he underwent an operation of canthoplasty. Whatever the condition at that time may have been, there resulted a stricture of both nares at a point corresponding to where the bony opening of the nostrils is, about half an inch from the external opening of the nose. These strictures formed evenly, so that the opening was almost in the center on either side; on the right side the opening was only two millimeters in diameter; on the left side, three millimeters in diameter. Being so small, you can readily see the patient has been unable to get sufficient air through them, and has been a mouth-breather all his life. Neither could he blow his nose; and the secretions would accumulate there, become thickened and crust-like, the same as we see in cases of atrophic rhinitis. This condition persisted up to the time I saw him, last November.

In this case I did the operation which Roe has described, although Roe simply adopted well-known surgical principles. Where you get two surfaces resting together without any normal skin between them they will grow together. In operating on a stricture of the naris it is similar to operating on a syndactylic finger, where the webs extend down the fingers. In operating simply by slitting that up, you will get no result as they will immediately grow together. The same way with reference to operating on a stricture of the nāris; consequently the important thing is to interpose between the two raw surfaces a mucous membrane (here Dr. Stubbs went to the blackboard and described the operation he did in the case).

I would like to say I did this in four stages—operated first on the lower half of the right side, then on the lower half of the left side, the upper half of the right side, and the upper half of the left side, with an interval of ten days between each operation. I first made a flap of the lower lining mucous membrane of the stricture, its point of attachment being the external middle point of the opening. Then the anterior lower wall of stricture was peeled up, its point of attachment being on the floor of the nose. With these flaps drawn away the connective tissue entering into the body of the stricture was now dissected out flush with the floor and external wall of the nasal passage. The flaps were now allowed to fall into place and held there by one or two stitches in each one as was found necessary to accurately hold them in apposition. The only spot not entirely covered by these flaps was a small area on the septal side of stricture where the flaps could not reach after falling down to cover the floor of the nose, but this denuded area does not make any material difference for the extension of mucous membrane onto same takes place rapidly without the danger of subsequent contraction. In ten days the same thing was done on the opposite side. Twenty days later I did practically the same thing on the upper half of the first side. It only varies in that the angle of the union of the septal and lateral walls must be thoroughly incised and well and carefully lined with mucous membrane or otherwise the success of the operation will not be complete. Later this was done on the remaining portion and now both sides were completely relieved of all stricture. To illustrate: If the naris were that size ordinarily (indicating), we now have an opening which comes flush to the surface of the septum internally, flush to the outer external nasal wall, but not quite flush with either the floor of the roof, for at these points we meet with the greatest difficulties in the operation and it is here that any cicatrical contractions will narrow the opening. In this patient we have succeeded in restoring practically all of the diameter of the naris, which was the least strictured, and about seven-eighths of the other.

At points on the external sides of the nose corresponding to the positions of the strictures internally, you can see where there were two extremely deep grooves where these strictures had drawn the alae of the nose inward.

As I first operated on the lower half, these deep depressed lines were unaffected because the stricture was not freed from above; but as soon as I operated on the upper half, relief was afforded. On the left side of the nose it is now smooth. On the right side there is still a little line, because here it is not quite as satisfactory in its results. At the same time, these lines which you see externally had drawn the bridge of the nose in, so that there was a saddle-back. That I shall have to correct with paraffin, and the only thing now left is that the tip of the nose is drawn down some. If, after wearing an artificial device to support it, it is not satisfactory, I will cut the cicatrical tissue which holds the nose down and either transplant a skin graft from the leg or, if necessary, move up a little flap from the lip. In this way we will succeed in giving him a fairly good nose. Before, it looked like a flat or frog nose against the face.

And yet the operation was not undertaken primarily for the cosmetic improvements, however much it may have been the determining factor for the patient. The pressing indication was to relieve the mouth-breathing and remove the grave menace that existed for the establishment at any moment of any of the various com-

plications of such a "stopped-up nose" i. e. sinus troubles, and catarrhal troubles of the ears.

Tuberculosis of the Larynx.

The other patient I intended to show has not arrived. I was in hopes that she would be here, so that you could see the larynx, and while it is not so much a departure from the ordinary tubercular larynx, it is interesting in this respect: Nearly a year ago the patient began to have sore throat, and later pain on talking, and still later pain on swallowing. She consulted her family physician, who gave a gargle, and that not relieving her, he gave a stronger gargle, which even burnt her throat without affording any relief. I saw her about the end of November, and in making an examination I found the epiglottis swollen and edematous. The vocal cords were seen in a limited spot near the posterior attachment, the remainder of the cords being covered by the swollen, edematous ventricular bands.

The patient presented the appearance of one having tuberculosis; on account of not being able to swallow without considerable pain, she almost starved herself, and had lost from fifteen to twenty pounds in weight. I immediately began the application of astringents and also the use of lactic acid, and in ten days the pain had so far disappeared, also swelling, that she was able to eat as freely as ever. At the end of a month she regained her normal weight. At the time I first saw her, I made an examination of the lungs and found nothing abnormal. She is now in the condition she was about a month after I began treatment. She is the picture of health. I have examined her lungs several times, and up to the present time I have not been able to demonstrate anything wrong with them. There has been no bacteriological examination made of the sputum, because she has had no cough and no sputum. As the edematous condition disappeared, it left tubercular nodules forming a horseshoe-shaped irregularly nodular swelling confined to the ventricular bands. I removed four-fifths of them by the oral route, and applied full strength of lactic acid after each removal. As to the condition now, the ventricular bands are slightly enlarged or thickened; the vocal cords are seen in their entirety; they are losing their redness, but are still thickened. Her voice is a little husky, but almost normal compared with what it was at the beginning.

I sent a specimen of the tissue removed to the Columbus Medical Laboratory, and they have reported that it was tubercular. While they found no tubercle bacilli, they did find giant cells, and the arrangement of the cells was such as to leave no doubt of its tubercular nature. Of course, we cannot say that this is absolutely a case of primary tuberculosis until a post-mortem examination is held, and the entire body is gone over when we may find a latent tubercular focus somewhere not in the larynx. She gives no evidence of tuberculosis in any other part of the body clinically. There is no tubercular history in the family. I am sorry the patient is not here. I would like to have you consider this a preliminary report, as I intend to follow the case up and eventually report whatever may disclose itself in the fullness of time.

Dr. Joseph C. Beck read a paper entitled **Some of the Newer Remedies.** (See page 419.)

Discussion.

Dr. E. Fletcher Ingals: This is a most interesting paper, and a very valuable one.

In reference to four or five of the remedies spoken of, my experience has not been the same as that of the author. Take, for instance, anesthesin. I have not used it in the oily preparations as he has done, but in powder form, and while occasionally it has acted as a good anesthetic to open wounds, sometimes it has seemed absolutely worthless, and has fallen into disuse. It would seem to me not to be a satisfactory remedy. I am glad, however, to find that it is as satisfactory as the author of the paper has found it. Perhaps used in the oily preparation it would be more satisfactory, and I would like to ask in what kind of oil or oily preparation it is dissolved.

The explanation of the essayist in regard to adrenalin causing ischemia of the nasal mucous membrane and marked ischemia of the meninges does not seem to me to be satisfactory, for my observation has been that it causes ischemia simply where it touches the line of demarkation, the part where it is applied, and the region beyond is so very sharp that it does not seem to extend any distance beyond, probably not more than one-eighth of an inch in any case when the drug is applied to the nose.

As to bromotone, I used it considerably a few years ago, and in several cases obtained fairly good results from not more than five grain doses. The author of the paper, I understand, used it in fifteen grain doses with satisfaction. I find five grains, three or four times a day, sufficient for most cases. The majority of them will not or cannot tolerate as much as seven and a half grains at a dose.

Dr. Beck said that he uses aspirin in doses of ten or fifteen grains. I have used this drug considerably; I have tried to take it myself, and I find I cannot take three grains, three times a day, without giving me a great deal of discomfort. A dose of ten or fifteen grains would be annoying to many patients.

My experience with pollantine has been a good deal like that of the essayist. I have used it considerably, but as I am usually out of the city during the hot season, I see hay fever patients who come early and late, and I have never seen but one patient in whom it seemed to do any good. I have tried it in quite a large number of hay fever cases. I have a patient, a policeman, who was affected with hay fever, and I gave him pollantine, and the next time he came back he told me that he never had anything that did him so much good in his life. I felt that the agent had done this patient great good from what he said; but a few weeks later he was unrelieved, became disgruntled, and did not make a final report. I do not think, however, I have given pollantine a fair trial. I have not used it as it has been recommended, namely, putting the patient in a dark room, keeping him

out of the dust and away from flowers. If we did that, most patients would not have hay fever anyway, and it would add to the reputation of the remedy.

Dr. Norval H. Pierce: Regarding the first remedy mentioned by the essayist—anesthesin; I have tried it in well-marked cases of painful, acute pharyngitis with varied results. In one case especially I remember, on examination nothing could be seen but an area of intensely red and somewhat edematous tissue around posterior and upper surfaces the arytenoid bodies. This case I am especially mindful of, as I then thought it one that would prove the worth of the remedy. The patient was a nervous woman, who was kept awake for a number of nights on account of this painful condition of the throat; she kept constantly swallowing. I used anaesthesin, carefully blowing it down on the affected area, but without any result apparently. In the itching of the external auditory canal, I have thought that it produces some benefit; but in very many of these cases the itching will disappear or become much better by the simple application of vaseline, containing no medicament whatever, to the external auditory canal, and it would be difficult to decide as to whether the amelioration of the itching was due to vaseline or to the anesthesin.

There is a very interesting question in my mind regarding adrenalin lately, as to whether adrenalin is as efficacious as formerly. Lately, in operating on deflected septa, I have gone to the trouble of procuring fresh solutions for each operation, and in several instances recently I have been very much disappointed in its ischemic property; in fact, the last preparation I used seemed devoid of ischemic properties. I do not know whether the other members of the society have noticed this or not, but surely I have.

Regarding iodo-nucleoids, I must say I was somewhat prejudiced against this preparation when it first came out, or rather believing it had no particular superiority over the other iodides. But I came across the case of a professional singer, with late secondary symptoms, who declared that he could not absolutely take iodides. He had been treated in France, and they had there given up the use of iodide of potassium and iodide of sodium completely, on account of their peculiar effect on the vocal cords; that is he lost his voice immediately on taking the iodide, so that he could not sing at all. He could take iodo-nucleoids in twenty grain doses, four times a day, without any bad effect whatever; and I have seen other cases in which I believed that part of the peculiar property of this remedy was in not producing the irritative effects of iodide of potassium and iodide of sodium. They surely produce as good results as the other iodides. I am quite convinced of that.

I have been somewhat disappointed in the use of pollantine; in fact, I have not seen a case that has been absolutely cured, and inasmuch as the remedy is actually worth its weight in gold, I believe that it is prohibitive in the large majority of cases. It seems to have a palliative effect, but I believe almost any powdered serum, and especially diphtheria serum, will produce the same effect as pollantine. I must say that this pure speculation marked a single observation, but I am going to experiment in this direction during the coming year, and I hope that this idea will be taken up by few of my colleagues we can easily procure powdered diphtheria serum, mix it up with sugar of milk, in given quantities, and apply it to the nose as we do pollantine.

As regards eucaine lactate, I would say that its local application is not satisfactory in the majority of cases, although occasionally it will produce local anesthesia. Injected submucously, it will produce invariably satisfactory anesthesia, and I use it almost entirely now in the excision of tonsils.

Dr. O. J. Stein: As to the Dunbar preparations for hay fever, the results I have had with them in my work have been somewhat satisfactory. In twenty-six cases, recently reported before the Chicago Medical Society, I tried to show that the results were such, when the remedy was used as a prophylactic, pure and simple, as to prove all that was claimed for it. As a remedy **per se** for the attack, I doubt whether I have ever obtained any good results from it. But used very early in the morning, before the patient leaves the house and at the onset of the first sign or symptom of the disorder, every one of my cases, excepting three, were prevented from having an attack or had a positive amelioration of the symptoms that were coming on.

Dr. F. G. Stubbs: I have used alphazne considerably in the last four months. My attention was drawn to it from the fact that I noticed it was claimed to be a substitute for hydrogen peroxide. As it is an oxidizer without the effeverscing reaction, such as we get from peroxide of hydrogen, it appealed to me that it should be of service where we wanted an oxidizing action of that kind, in sinuses or in ear conditions, and as Dr. Stein has said, I have had satisfactory results with it in suppurative middle ear cases.

Dr. Beck (closing the discussion): In answer to Dr. Ingals' first remark, about anesthesin, the literature on the subject shows plainly that it is best soluble in oils like lanoline, as well as sweet oil, olive oil, or liquid vaseline. In salves and liquid oils, it acts properly and has done so in those cases in which I have used it.

With reference to what was said about bromotone, I did not mean to convey the idea that I prescribed it in fifteen grain doses as a rule; but I very often prescribe it in such doses, without any complaint on the part of the patient. Those cases in which I have used it have usually been cases of marked tinnitus aurium, in which bromides, such as strontium, were given, with bad results, producing acne. Bromotone does not produce acne. I do not hesitate to prescribe such a large dose in some instances.

As to aspirin, ten grains is the universal dose in general medicine.

In answer to the remarks made by Dr. Pierce in regard to anesthesin, I have been disappointed

in the use of this agent in that it did not act in every case. I have used it in some cases with satisfaction, and I can advise its trial. In the one case I mentioned, of intense itching of the external auditory canal, I used carbovaseline without any relief. In this case there was not only itching, but there was actual eczema present, and the anesthesin not only relieved but seemed to cure the condition, so far as we can obtain a cure of a chronic eczema.

With regard to pollantine, Dunbar has stated that the pollantine we use here is not the pollantine he would recommend for us to use. It was put on the market as an inferior preparation over which he has no control, and he hopes to have a preparation of pollatine which will act as a specific in the cases in this part of the country due to ragweed and golden rod.

I have never used injections of eucaine lactate, but I am glad to hear the experience of Dr. Pierce. If I remember rightly, he remarked about the drug in the same way at a previous meeting, when he used it locally, using it in 15 per cent. solution.

I have used alphozone as a .asal wash, but I will say that camphoroxol has given me perfect satisfaction. I like it much better than alphozone, because I do not like to use water in the ear for home treatment. The alcohol is much better.

In regard to Dr. Stein's remark about the use of pollantine before the beginning of the hay fever season, seven of my cases used it as long as two months before the season came on, and, as I said, with no better result than in starting it at the time of the attack. It did not seem to have any effect whatever.

Dr. Gordon Wilson read a paper entitled, "Sensory Nerve Endings at the Entrance to the Larynx, with Special Reference to the Structure and Function of the Taste Buds."

On motion, a vote of thanks was extended to Dr. Wilson for his admirable paper.

Dr. Fletcher Ingals read a paper entitled, "Bronchoscopy for the Removal of a Collar Button from the Lung." (See page 447.)

Discussion.

Dr. Joseph C. Beck: Ever since the reports of Killian, and particularly the reports of Dr. Ingals before this society, I have felt very sorry that I did not know more about bronchoscopy seven years ago, when we could have used such an instrument in a case that came under my brother's care and mine at that time. We had under our observation such a case and had to pursue operative procedures.

The patient was a boy, fourteen years of age, from Ohio, who inspired a collar button. A physician was called in a few moments afterwards, who found the boy in a cyanotic condition, and obtained a history that a button had been inspired. He attempted to remove the button with his finger, also by turning the boy upside down, but did not succeed. The boy was kept under observation for about a week, when he developed pneumonia, and the temperature ran as in the case described by Dr. Ingals. Two months after he recovered from pneumonia, the boy was taken to Toledo; a skiagraph was taken, and button located. But shortly after that, say about three weeks, a severe burn of the chest was discovered. The boy was brought to Chicago with a large burn, and kept under observation for two months. There was a slow healing. This large burn assumed the appearance of a malignant growth, and was thought to be such by other surgeons, and by a microscopical examination said to be sarcoma. I wish to say that while physicians are treating sarcoma now by the X-rays, we know that one of the most expert X-ray men in this city (Mr. Fuchs) has developed an epithelioma of the finger and has had to have the finger amputated. I wish to mention that incidentally in connection with this boy's burn. After the burn had healed sufficiently, so that the boy could be operated on, he was put under an anesthetic and operated for an abscess of the lung; resection of the ribs was made, and an Estlander operation performed, with the evacuation of a large quantity of pus. The cavity was washed out, and a search was made for the button, but no button could be found in the region indicated on the skiagraph. The boy recovered from the operation, and gained very much in weight; but continued to cough. Two years later he returned to the city for the eventual cure of this condition, with possible resection of the lung. Such an attempt was made by Dr. Carl Beck, and a cut into the lung was followed by such a profuse and alarming hemorrhage that the operation was discontinued and the wound allowed to heal. The patient still has the button in his lung.

Dr. F. G. Stubbs: I would like to say a word or two suggested by the result of an operation I did this afternoon, and which is in line with the remarks made by Dr. Ballenger tonight. I think in many respects his instrument is an improvement on Killian's knife. The only thing is that in some cases he would be unable to use it in the manner he suggests, for while it may be used in a case which is easily proceeded with, as far as separating the muco-perichondrium from the cartilage is concerned, yet in many of these cases of extensive deviation we find over the edges with sharp corners the perichondrium is so adherent that it is impossible to proceed in separating it in its entirety on that side before we attempt to remove part of the cartilage. In that case it would be impossible to push the knife back along the floor, then up and forward on the upper part of the cartilage for the point of adherence of perichondrium would prevent the fork of the instrument from passing upward at this spot. In this case we have to remove part of the cartilage and then it is much easier to separate the muco-perichondrium at these adherent points.

The operation I did today gave me the specimen which I show you. I intended to remove a spur, and on examining the case carefully, I found there was slight deviation, the spur, of course, being on the side of the concavity. I have been using the Hajek spur chisel to the exclusion of the saw and other instruments, and I conceived the idea that with this chisel I

could remove where this spur was attached, so I made an incision in the muco-perichondrium, and separated that from the cartilage and bone as far as the extreme apex of the deviation. The apex extended out so far that it went into the middle meatus almost to the external wall of the nose, so it was impossible to continue the separation back of that. I introduced the chisel to the anterior edge of the spur and drove it back until I perforated the bone, and then with my speculum in the opposite side of the nose, I had my assistant gently tap the chisel, while I supervised the point of the chisel, which was now on the opposite or concave side, between bone and mucous membrane. I could see it lift the mucous membrane upwards as in separating on the opposite side for the ordinary window resection, until it got to the far side of the concavity when I pushed it straight through the bone, back on the spur and into the side of the concavity. In that way I removed not only the spur, but the entire thickness of the bone entering into that part, with intact mucous membrane on side of concavity.

The interesting part of the specimen is that the apex of this spur consisted of a prolongation of the cartilage from the cartilaginous part onto the bone, clear to the apex and around the back of it.

As you have read the article by Killian in the last Archive, you will remember that he spoke of this point; that in removing spurs low down, many times the spur on the bone near the floor is composed of cartilage overlying the bone, and after reading that article I was lead to believe it was simply a displacement downward, but in finding this spur covered with prolongation of cartilage back over the bone, I am led to believe that in a great many cases the spurs overlying the part may be cartilage prolonged on to bone.

WEST SIDE BRANCH.

Officers.

President.....John A. Robison, 297 Ashland Boul.
Secretary.....J. J. Alderson, 264 S. Halsted st
Delegate to Council.....A. I. Bouffleur, 100 State st

In place of the regular monthly meeting of our Branch in January, the Branch held a banquet and reception at the Hull House, 335 So. Halstead street, where we gathered with our wives, daughters, sisters, etc., to the number of eighty persons, and had a most enjoyable time.

We were favored with an address by Miss Jane Addams of Hull House.

The following responded to toasts: Dr. John A. Robinson, our president; Dr. Emma C. Hackett, Dr. L. L. Skelton. One of the best features of the evening was an extempore talk by Dr. C. M. Fitch, a sturdy man of some 80 years old and still in daily practice; also by Dr. I. N. Danforth, our ex-president; then a rousing talk on organization by Dr. W. A. Evans.

Dr. Theo. Tieken proved himself capable as toastmaster, as he is teacher and worker.

Much credit is due to the efficient committee, Drs. W. M. Fitch, C. J. Rowan and C. C. Rogers.

We find these annual banquets a great aid in promoting a feeling of cordial friendship throughout our district.

At our February meeting Dr. C. C. Rogers read a paper, **Extra-Uterine Pregnancy, with Report of Cases,** being devoted to the etiology, symptoms, diagnosis and treatment of such cases. The doctor advised operation in every case that could be diagnosed as extra-uterine pregnancy, and gave a history of a number of operative cases and exhibited a specimen of ruptured tubal pregnancy he had removed a few days before.

Dr. J. J. Stoll read a paper on **Curettement** and reported a case bearing on the subject of the paper. The doctor condemned the present promiscuous use of the curette particularly the severe curettements we at times witness.

In the free discussion which followed, the bulk of opinion was in favor of Dr. Stoll's views and also against plugging the cervix with gauze after curettement, and the prevalent custom of cauterizing the uterine cavity after curettement.

Dr. J. A. Salisbury read a paper, **Clinical Value of the Examination of the Feces,** which was received with much favorable comment by all present, and different members expressed a desire to have an opportunity to study it in print.

The Clinical Value of Feces Examination.

Until the introduction of the stomach tube for diagnostic purposes and the systematic examination of the stomach contents after a definite test meal, the greatest uncertainty in regard to the meaning of symptoms referable to the stomach prevailed. A similar uncertainty still exists in regard to the abnormal processes occurring in the intestines. Naturally the examination of the feces presents itself as the analogue of the examination of the stomach contents and we might expect such an examination to throw great light upon the digestive processes. The attempt, however, to find in the feces a basis for a judgment as to the abnormal process occurring in the intestine has proved for the physician an unprofitable and unpleasant process. That it has been too much neglected goes without saying. This neglect is due partly to the unpleasantness for patient and physician involved in the nature of the material.

A suitable vessel in which to convey the material to the physician is a great desideratum. A glass ointment jar serves the purpose well for small quantities of feces and is to be preferred on the whole to a container holding large quantities. For the whole feces a good vessel is a glass fruit jar which can be closed air tight and needs only a suitable outer covering to make it an ideal container for this purpose. So far as the physician is concerned, examination of the feces is sometimes unpleasant, but this objection should have little weight if an important purpose is to be accomplished.

Another reason for neglect of feces examination lies in the fact that hitherto we have lacked a systematic method of examination which would throw a clear light upon the digestive processes. Previous examinations of the feces have been directed to the discovery of gall-

stones or the eggs of parasites, but have seldom been intelligently directed to the determination of the degree of perfection with which the functions of digestion have been performed.

The perfection with with normal digestive organs utilize the material submitted to them is so great that the feces normally consist of nothing but the indigestible residues of the food, bacteria, and remains of the digestive secretions, more particularly the coloring matter of the bile.

Imperfection of the digestive processes will be indicated by the presence in the feces of undigested material or material which has undergone digestion but has failed of absorption. The discovery in the feces of muscle fibres, connective tissues, elastic fibres, free starch, soluble albumin, or much fat, is evidence of imperfect digestion. But this discovery leads to two questions. 1st: Is this imperfection due to a diseased condition of any organ or is it due to the unusual task imposed upon the digestive organs by abnormalities in the quantity, quality, or preparation of the food? 2d: If disease of the digestive tract exists what organ is affected and in what way?

In answer to a first question we may state: The discovery of undigested food residues in the feces affords no certain indication of disease or abnormal function. Too large a quantity of meat or vegetable food or of fat is pretty sure to be followed by the appearance of undigested residues in the feces. Fermenting food or food of an irritating quality may so excite the intestinal peristalsis as to hurry the food through the digestive tract before digestion and absorption can occur. Raw potatoes, underdone meat, or imperfectly chewed food are apt to give undigested residues. Just as without a test meal the amount of acid in the stomach contents gives no reliable indication of the state of the gastric functions, so without a knowledge that the diet was normal we can draw no reliable conclusions from the appearance of undigested residues in the feces. To obviate this difficulty, A. Schmidt has devised his test diet. This diet has the following composition:

Morning—0.5 liter of milk (or when milk does not agree) 0.5 liter cocoa (made from 20 gm. powdered cocoa, 10 gm. sugar, 400 gm. water, and 100 gm. milk), and 50 gm. zwieback.

Forenoon—0.5 liter oatmeal gruel (prepared from 40 gm. oatmeal, 10 gm. butter, 200 gm. milk, 300 gm. water, and one egg). This gruel should be strained.

Noon—125 gm. hashed beef (raw weight) superficially roasted in 20 gm. butter so that internally it is still raw.

Also 250 gm. potato puree (prepared from 190 gm. mashed potatoes, 100 gm. milk, and 10 gm. butter).

Afternoon—The same as morning.

Evening—The same as forenoon.

The stool that results from this diet has a more homogeneous consistency and a lighter color than the previous stools. The second stool is usually due to the test diet. Normally this stool contains little fat and this is not free but in the form of soaps or of fatty acids. It contains no connective tissue, no muscle fibres, no starch. This standard applies to the microscopic appearance of the stool. Occasionally connective tissue, muscle fibers, or starch may be found microscopically in small amounts. In such cases, the judgment as to abnormal functions must rest upon the amount of food residues present, and, to some extent, upon their character. Thus muscle fibers that are well preserved in long pieces with sharp corners and plainly marked striations indicate imperfection in the digestive process. Free starch (not enclosed cells) is pathologic. Neutral fat in droplets is abnormal.

The presence of considerable connective tissue recognizable by microscopic examination indicates imperfect activity of the stomach often dependent upon achylia or gastric atrophy. This determination may often be of the greatest importance where it is impracticable to remove the stomach contents. The discovery that intestinal disturbance depends upon imperfect action of the stomach is of the greatest importance for the therapeutics as well as diagnosis.

Evidence of the activity of the liver is afforded by the presence of urobilin in the stools. The brown color of feces is due to urobilin and when bile fails to enter the intestine the stools become clay colored. But it has been shown that the light color of such stools is occasioned quite as much by the amount of fat present, as by the absence of bile coloring matter. The microscopic examination of such stools will not justify the conclusion that the function of the liver is impaired. In Schmidt's test for bile coloring matter we have a means for determining this question. This test is made as follows:

A considerable portion of the stools (10 gm.) is rubbed in a mortar with a concentrated solution of mercuric chloride and allowed to stand from 6 to 24 hours. Urobilin will be colored red while bilirubin, if present, becomes converted into biliverdin and gives a green color to the mass. The presence of bilirubin may be ascertained by microscopic examination in cases where the macroscopic examination shows no evidence of its presence because the green color is obscured by the greater amount of urobilin present. Muscle fibers, vegetable residues and mucus which have been stained by the bile show a green tint under the microscope. The presence of either urobilin or bilirubin is evidence of the functional activity of the liver and patency of the bile passages. The occurrence of bilirubin in feces indicates either a greatly increased peristalsis or a diminution in the activity of the reducing action of the intestinal contents which converts bilirubin into urobilin.

This change occurs in the lower part of the small intestine, so that the occurrence of bilirubin in the stools is evidence of the disturbance of the functions of the small intestine.

Colorless stools may also be due to the conversion of urobilin into a colorless derivative called leukourobilin and such stools have the appearance of clay colored stools. The color of the urobilin can be restored by treating the feces with acidified alcohol.

The light thrown upon functional disturbance of the pancreas by examination of the

feces is at present insufficient to permit very valuable conclusions to be drawn. The most that can be said is that with marked disturbance of fat absorption a failure more or less complete of fat-splitting and the presence of much neutral fat, many undigested muscle fibers, and free starch, a strong presumption in favor of disease of the pancreas is created. These conditions lose their significance if biliary obstruction or diarrhea are present. This matter has been thoroughly reviewed by H. Ury and M. Alexander. When this condition of the feces is associated with glycosuria, the presumption reaches a certainty. Many disturbances of the pancreas, both slight and severe may pass unnoticed with our present means of investigation.

There remains to be considered diseases of the intestine itself. The functions of the intestine may be classified under the heads of secretion, absorption, and motility. Disturbance of one of these is likely to be associated with disturbance of others so that it is difficult to say in any given case that the condition of the feces depends upon one factor to the exclusion of others. We possess a criterion for the motility in the time required for the various ingested articles to traverse the intestinal canal. This can be measured by giving a gram of carmine and nothing when the feces are tinged with pink by the carmine. This period depends, however, almost entirely upon the motor activity of the large intestine and we have no means of knowing how long food takes to pass through the small intestine. It is to be hoped that this hiatus in our knowledge will soon be filled by further studies.

Evidence of a disturbance of function in the small intestine is afforded by the presence of muscle fibers, plant residues, or mucus stained with bilirubin which becomes green by the action of mercuric chlorid in Schmidt's test for the biliary coloring matters. Bilirubin normally changed to urobilin in the small intestine and if this conversion fails we have reason to conclude that the functions of the small intestine are at fault.

Abnormal fermentations may furnish evidence of disease.

The occurrence of these fermentations is conditioned on the presence of fermentible material which consist of the carbohydrates principally starch in case of putrefactive changes. The alkalin fermentation is frequently due to the decomposition of mucus, pus, or blood. The acid fermentation usually precedes and excludes putrefactive changes.

Schmidt has devised a somewhat complicated apparatus to determine the presence of fermentible material but Strauss uses an ordinary fermentation tube consisting of a large test tube which is filled with liquid feces and closed with a bent tube. The test tube is inverted, placed in the incubator for 24 hours and the gas collects in the upper part of the tube.

Pus and mucus arising in the small intestine can not generally be recognized in the feces.

With blood the case is different. Blood which has its source in any part of the intestinal canal may be recognized by a simple chemical test. The test is Weber's modification of the Guaiac test. It is so sensitive that the blood shed in cleaning the teeth may give a positive reaction. Before this test is made, red meat and other extraneous sources of blood coloring matter should be excluded from the diet for two or three days. It is evident that it is not applicable after the test diet.

The importance of this test can scarcely be overestimated. It is of great service in the diagnosis of ulceration of the stomach or intestines, or of carcinoma, or tuberculosis or syphilitic ulcers. It is also a guide in the treatment of ulcer, as the presence of blood in the stools shows that the diet is not bland enough. Its use in typhoid is to be recommended as a possible means of putting the practitioner on his guard against oncoming hemorrhage or perforation.

A further use of the test diet, in the author's opinion, will be found in determining that certain abnormalities are due to injudicious diet and not to a positive lesion of the intestinal tract. In case muscle fiber and free starch are found upon examination of the stools under the ordinary diet and disappear when the patient is placed upon the test diet, we may say that the trouble lies in the character of the diet and not in an actual diseased state of the digestive organs. By repeated examination of feces a diet can be arranged which will be suitable to the particular case.

The examination of feces presents the advantage that its material is easily accessible and can be repeatedly obtained without risk to the patient and the methods are so simple as to be within the reach of every practitioner.

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A regular meeting of our branch was held at the Cook County Hospital, March 16, 1905, at 8:30 P. M., our president, Dr. John A. Robison in the chair.

Minutes previous meeting read and adopted. A short explanatory talk on the objects of our branch was given by Dr. Robison, after which Dr. Aug. Jacobson presented a specimen of double bladder, with a history of the case."

Dr. J. Scott Brown reported a case of supra-acromial dislocation of the clavicle with anatomical recovery without operation in a man 80 years old.

Dr. H. O. White read a paper "Feigned Pregnancy with report of case."

The paper elicited quite a discussion and many valuable ideas were brought out.

Owing to the lateness of the hour a paper, "Therapeutic uses of Drinking Water and some of its Dangers" by Dr. Eliza H. Root, was deferred to our meeting of April 19.

Feigned Pregnancy—Pseudocyesis.

Mrs. T., Russian by birth, 30 years of age, married about 7 years, nullipara, housewife by occupation, consulted me in January, 1900, as to the cause of her sterility. She complained of severe dysmenorrhoea with very scanty menstruation and leucorrhoea. Otherwise, perfectly well, except some indigestion, accompanied with

slight constipation and a marked degree of anemia. On examination I found the thoracic as well as the abdominal organs negative. Bimanual examination of the pelvic organs revealed the uterus and its appendages normal in size and position, freely movable, and absence of tenderness on external or internal palpation, but a very much contracted external and internal os with a corporeal leucorrhoea.

From the above examination I presumed that the partial stenosis and anemia were in all probability the cause of the dysmenorrhoea, leucorrhoea, and perhaps also of the sterility. I advised forcible dilatation of the cervix under general anaesthesia and curettage. To this she readily consented, as she was extremely anxious to undergo almost any procedure in order to be relieved from the dysmenorrhoea and leucorrhoea, and perchance, from sterility.

On February 11, 1900, I did the proposed work, and in addition introduced a specially-constructed hard-rubber stem pessary into the cervix, extending somewhat beyond the internal os, and left it there for about 8 weeks, in order to insure, if possible, permanent patulence. This procedure, together with the subsequent administration of Iron, Quinine, Strychnin and Arsenic in tonic doses, relieved her entirely from the dysmenorrhoea and leucorrhoea. She gained in strength and weight, and the anemia entirely disappeared. She remained fully hopeful to conceive in the nearest future.

After the elapse of a few months Mrs. T. again returned to me with the same question of sterility, and when after a careful examination all the pelvic organs were found in perfect condition, and after a physical examination of her husband, as well as a microscopic examination of the spermatic fluid proved negative, I advised her to wait, and that everything might be well in the future.

She did not return to me any more, but as is usually the case with such patients, traveled around the city to find some one "willing to remove" the cause of her sterility. A year ago last January her husband told me that his wife consulted Dr. B. Van Hoosen of Chicago, who advised and operated on Mrs. T. in order to remove the cause of sterility. About three months after the operation Mrs. T., missing one menstrual period, consulted her physician as to the cause of it, and was told that she had become pregnant.

I was indeed exceedingly glad to hear it, knowing how extremely anxious that woman was to give birth. On December 17, 1904, Mrs. T., accompanied by her husband, came to my office to engage my services to her confinement. She claimed to be in the ninth month of pregnancy. She gave me a clear history of the early signs of pregnancy,—the nausea, vomiting, the amenorrhoea, enlargement of the breasts with secretion of colostrum, enlargement of the abdomen, and the sensation of fetal motion, and that she had made every preparation for the impending labor.

After a careful estimation of the symptoms and an equally careful local and combined examination, I had no difficulty to convince myself of the true state of affairs. The instant I touched the cervix it was apparent that the uterus contained no fetus, at least no fetus near term, and although the abdomen was quite large, yet the outline of it was not like one usually seen at nearly full term in true pregnancy.

I have never seen a more pitiful and distressing condition of both husband and wife than theirs after I had assured them that Mrs. T. was not pregnant. At first she was full of grief with tears rolling over her face in rapid succession, and a few minutes later she again and again insisted that she was pregnant and that I must acknowledge it, as it was impossible for her as well as for her husband to be deceived by distinct fetal movements, and by the secretion of milk from her breasts. She even accused me of purposely misleading her, stating that I might be dissatisfied because she allowed another physician to "remove the cause" of her sterility. Later on she wished her death, and repeatedly threatened to destroy herself rather than suffer the possibility of not becoming a mother, and that this condition would kill her anyhow. In short, she absolutely refused to be comforted in any way, shape or manner. Their belief was grounded chiefly on the distinctness and force of the movements of the supposed fetus, but I became convinced after examination that it was strong peristaltic action of the intestines misleading her, and that pregnancy was counterfeited with wonderful similarity.

At last I proposed a consultation with any leading obstetrician whom she might choose, to which husband and wife readily consented. It was mutually agreed to meet the following day at a chosen physician's office at a certain time. But I found myself disappointed when I learned the next day that Mrs. T. returned to her former physician who "removed the cause" of her sterility, and who even at this time assured Mrs. T. of the existence of pregnancy, and that there was consequently no cause for her grief, and that everything would terminate happily in the very nearest future. In corroboration of the statement, the attending physician, placing the approximate date of delivery between the 5th and 10th of January, 1905, accordingly took the patient to some private home for the purpose to be confined. Mrs. T., remaining there until the 15th of the same month without the desired result, was compelled to return to her home in despair.

My object in reporting this case is not for the purpose of recording a case of phantom pregnancy, but to indelibly impress the importance of making a thorough bimanual examination, and repeating the procedure, if necessary, on every woman who supposes herself to be pregnant and comes to engage our services for the impending labor. My curiosity was aroused as to the importance authors on Obstetrics attach to the question of examining women supposed to be pregnant. In looking through many of the Obstetric text books, I failed to find anything mentioned on that subject in the older ones, such as Leishman, Cazeaux, Barnes, Playfair, etc.

Lusk: (Science and Art of Midwifery, p.

107) says: "Patients by their statements may in perfect good faith lead the physician into error."

Parvin in his book on Obstetrics, p. 179, says: "The practitioner who will avoid diagnostic error as to pregnancy must faithfully interrogate all the changes, both organic and functional, in the maternal organism, and those which are caused by fetal development."

A most excellent article on the importance, advantages and desirability of always resorting to a most thorough examination, and if need be, repeated prior to the time of delivery, is given in "The Cyclopedia of Obstetrics and Gynecology (Vol. I), a practical treatise on Obstetrics by Dr. A. Charpentier, 1887."

I have consulted many of my professional friends in Chicago concerning this question, and I was indeed surprised with the reply; that unless some special indication requires it, no examination is attempted. It is my custom to examine every woman who comes to me with a supposed pregnancy, and I have found very few women, almost none, who would not submit to the procedure if a proper explanation is made, or who will object to an examination for obstetric diagnosis. And unless my services are not engaged, I particularly request them to return at a later date, for I never pronounce a positive diagnosis until the fetal heart sounds can be distinctly elicited. I therefore deem it the obstetrician's duty to explain to the patient as well as to relatives, if any are present, the absolute necessity of more careful examinations, and to perform them with the utmost consideration, propriety and gentleness, for then and only then can the physician be prepared for the assumption of his professional obligations. I am convinced that every physician, in assuming the case of a woman supposed to be pregnant, should in the interest of his patient endeavor to ascertain not only the fact of the existence or non-existence of pregnancy, but also a positive knowledge, if possible, of all the data bearing upon the size of the pelvis, the condition of the soft parts of the mother, and the position of the child; and this information can only be obtained by careful, painstaking, and if necessary, repeated combined examinations. Cases of false pregnancy are not so rare as the general practitioner is inclined to suppose, and I can corroborate my statement by no less an authority than Dr. More Madden of Dublin, who states in "The American Journal of Medical Science of 1890, p. 27," that it occurs in nine cases out of ten of the kind in childless women extremely desirous of offspring."

Two varieties of Pseudocyesis are usually recognized: Local and Constitutional.

The former is usually met with in those cases of severe dysmenorrhoea, where occasionally, or even at every monthly period an excessive development of the uterine mucous membrane takes place, and which becomes greatly vascular and swollen, being eventually thrown off in the form of a cast, resembling in every respect the decidual membrane formed in the early weeks of every true pregnancy. The expulsion of such membrane is naturally accompanied with great pain, and one can occasionally observe such a case associated with some of the ordinary sympathetic phenomena of pregnancy, such as: Morning vomiting, enlargement of the breasts with darkened areolae, etc. But the principal source and origin of all these phenomena chiefly depend upon the local changes in such a uterus, and therefore the subject properly belongs to Membranous Dysmenorrhoea, which is quite familiar to all of us.

Constitutional Pseudocyesis is a subject of greater interest for investigation; for here we see a patient before us who unhesitatingly and insistingly declares herself to be pregnant, and whose statement you will not doubt, unless, together with the history, a very careful external and internal examination is performed. No class of patients are more unsatisfactory to meet with in practice than those now under consideration. The duty of a physician is very seldom more pleasant than when he is compelled to inform a woman, who for several months has faithfully believed herself to be pregnant, and has communicated this to her friends, and who has made all the necessary preparations for the welcome arrival of the new born, that she is not even pregnant. Again, if it happens that the attending physician neglects a thorough examination, I repeat, bimanual, or makes simply a superficial one, and easily coincides with the patient's opinion, he therefore makes himself a party in her self-deception; but as soon as the true state of the case comes to light, he will incur an almost incredible amount of odium from the patient, who makes him the scape-goat for all the bitterness for which a woman's pride is capable.

As to the diagnosis, false pregnancy in the early stages is always a matter attended with no little difficulty, for the symptoms may, and quite often do, exactly simulate those of true pregnancy in the same stage, but as the great diagnostrician "Time" advances till after the fifth month, the positive signs cannot under any circumstances be counterfeited. Indeed it is very possible that in cases where women are anxious to be thought pregnant, to consciously contribute to the deception of the diagnostician by causing the abdominal muscles to become tense and rigid to such an extent that proper palpation of the uterine tumor is rendered impossible, but to this end a few whiffs of chloroform will clear up every doubt.

Very Strange.

Dr. Eury Strange who is attending the Marion Sims College, St. Louis recently visited Dr. Algy Strange his brother at Litchfield.

Dr. W. K. Wright of Taylorville, has left for California to reside. The illness of Mrs. Wright made this necessary.

Dr. and Mrs. Glidden of Danville, were entertained during the inauguration ceremonies at Washington by Speaker Cannon.

Dr. C. G. Wilson of Shenandoah, Iowa, has located in Chicago.

County and District Societies.

ADAMS COUNTY MEDICAL SOCIETY.

Regular meetings held in Quincy the second Monday of each month at 2 p. m. Membership 70.

Officers.

President.....Jno. A. Koch, Quincy
First Vice Pres.....J. M. Grimes, Camp Point
Second Vice Pres.....H. Hart, Quincy
Secretary.....Geo. E. Rosenthal, Quincy
Treasurer.....R. J. Christie, Quincy
Censors—Jos. Robbins, L. B. Ashton, E. B. Montgomery, Quincy.

Delegate to the State Society, L. H. A Nickerson, Quincy.

Alternate to the State Society, R. J. Christie, Jr., Quincy.

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The March meeting of the Adams County Medical Society was held at Quincy, March 13th, with President Nickerson in the chair.

Dr. W. W. Williams presented the following paper on "The Treatment of Mammary Tumor:"

The treatment of benign tumors of the breast is usually by simple incision of the tumor, which is generally followed by rapid recovery. But I wish to devote my time to the discussion of the treatment of that dread disease, carcinoma of the breast.

One should ever be mindful of the fact that internal metastases occur early, oftentimes before we suspect them, and, therefore, not a day should be lost unnecessarily in waiting for an operation. It is very important to attack carcinoma of the breast early, and I consider an operation is indicated even in cases that are clinically doubtful.

Surgeons are aware that the prognosis depends upon the extent of the growth, and should expose all tumors for the purpose of diagnosis when carcinoma cannot be absolutely excluded. The surgeon should no more hesitate to make an exploratory incision to determine the nature of a tumor of the breast than in the case of obscure abdominal tumors. It is not right to keep a woman with a tumor of the breast that cannot be shown to be benign, under observation for months, make use of ointments, and finally be obliged to confess that the condition is carcinomatous. The most favorable time for operation has passed and the chances of recovery greatly diminished, as specimen No. 1 on exhibit proved. Mrs. O., age 45 years, first consulted me March 18, 1900, at the request of the late Dr. Virgil McDavitt, who had charge of the case. The tumor of the breast had been discovered eight months before. I diagnosed carcinoma and advised an immediate excision of the breast and axilliary glands, which she refused. I did not treat the case until April 23d, following. I did a Halsted's operation, covered in wound with skin flaps, which healed nicely, but she died of metastasis twenty months later. Operation upon the breast for cancer and cleaning out of the axilla is not especially dangerous to life. The death rate is less than 1 per cent. Sepsis, heart-failure, emboli and hypostatic pneumonia are the chief causes of a fatal termination. I believe that cancer of the breast in its early stages is a local disease, and that a permanent cure is possible by radical removal of the tumor. The condition never gets well of itself, and the result of other methods of treatment is extremely doubtful. A cure can only follow a radical operation. I would not advise an operation in which there is extensive involvement of the skin or of the ribs, and where there are immovable masses of glands in the axilla associated with neuralgia and disturbance of circulation. It is evident that no operation is possible when internal metastases exist or when the woman is cachectic and exhausted. Enlargement of the clavicular and cervical glands should not deter surgeons from operating, as they can be removed by extensive dissection, but when there are extensive glandular involvement they should not be operated on as the results are unfavorable.

It is absolutely necessary to remove the entire breast and at least the superficial fibers of the pectoral muscle in any cancer of the breast, no matter how small the tumor, and the axilla dissected even when no glands can be felt. Believing that women are prone to overlook and then conceal mammary tumors, and further, that general practitioners, who will be the first consulted, are not usually prompt in referring such cases as their gravity requires, axillary involvement will almost inevitably have taken place when the surgeon is first consulted. Prof .W. L. Rodman, of Philadelphia, says: Upon this point I wish to speak positively, as I have never operated for scirrhous cancer where there was not both microscopical and macroscopical involvement of the axillary glands.

Practically all of the fifty American surgeons expressing themselves upon this point agree that the axillary glands are invariably found infected at operation. Therefore, in planning an incision, one should think as much of the axilla as the breast, both for practical purposes, being looked upon as certainly infected. The next thought should be of tissues probably infected, and under this heading will fall the intervening lymph channels betwen breast and axilla. The fascia covering the pectoralis major in most instances, and the sternal portion of the muscle itself (or glands within the substance) in a very much greater number of cases than hitherto suspected. It is certainly desirable to remove all infected tissue en mass, thereby avoiding the liberation of cancer cells if it can be done without increasing the mortality, lengthening the convalescence or materially impairing the patients subsequent usefulness. The operative mortality is so low that it may practically be disregarded, being very much less than minor operations on the breast were ten years ago. The convalescence is not much if at all, lengthened by the major operation; and large experience has demonstrated that removal of the mus-

cles does not permanently impair the function of the arm to a serious degree, save in a few rare instances, and then due chiefly to loss of skin rather than muscle. Serious contraction of scar can, in a great measure, be prevented by Thierch's grafts when needed. Be sure and remove plenty of skin as you must remember that recurrence is very generally in the skin.

As to the axillary glands, it may be said positively that they cannot be removed entire unless the pectoral muscles are first cut away.

Volkman was probably the first to remove the pectoral muscles, but to Halsted belongs the credit of first practicing removal of apparently healthy pectoral muscles as a routine matter. It is better, however, to reverse Halsted's method i. e. begin at the insertion and work toward instead of away from the sternum, for these reasons: (1). The axilla is uncovered at once; (2) hemorrhage is more easily controlled; (3) the axilla is cleared from above downward, and not from below upward; (4) the large, heavy mass containing the breast is not in the way, while the tedious axillary dissection is going on; (5) one can more readily and more certainly remove all infected tissue in one piece; (6) it makes unnecessary—and this is of the greatest importance—handling of the breast by surgeon and assistants, which may result in expressing cancer-cells upon healthy tissues.

Drainage. It is my belief that drainage should always be made after an axillary dissection, for unless it be done much time must be given to arrest every particle of hemorrhage, otherwise a large clot will form in the dead space left behind and invite suppuration. Of twenty-five surgeons expressing themselves upon this point, all but three (Bloodgood, Halsted and Richardson) invariably drain. The necessity for drainage seems especially urgent when the axillary vein is injured; formerly all such cases died; now they do not.

Supraclavicular Glands: Halsted and his associates at the Johns Hopkins remove the supraclavicular glands in most cases, and this should be done if there is noticeable enlargement of these glands or if the subclavian chain of the axillary ones are at all enlarged they should be removed.

Three-Year Limit: Most American surgeons do not regard the three-year limit as at all certain and the general tendency is to extend the period to five years.

Professor W. L. Rodman, of Philadelphia, says in his investigation as to ultimate cure, six surgeons (Abbe, Crile, Halsted, Powers, Warren and Rodman) reported 629 cases operated—favorable and unfavorable cases, of which 44.16 per cent of cures, or patients who had passed the three-year limit without evidence of either local or general recurrence. Several of the cured were recurring ones, (Warren, Halsted, Ochsner, Powers, Taylor, Park, Abbe, Willard, DaCosta and Richardson). Also Rodman reports one case of his own, operated upon for a second recurrence of a schirrhous carcinoma, was perfectly well more than six years after the third operation. I have one case that was operated on in Minneapolis, Minn., followed by a return of the growth. I did a second operation and removed everything down to the ribs, cleared out the axilla, made skin flaps and closed the wound, which healed, and there has been no recurrence in eight years. This is the specimen I removed, No. 2. I operated on a case of cancer of the breast of a lady who came from near Portland, Oregon, in 1885. removing the breast. I heard from her two years ago saying she was in good health. Her case had ben pronounced incurable by the physicians before she came to me for operation.

Conclusions.

1st. An early diagnosis should be made and no time lost in waiting for an operation, as metastases to the axillary glands and internal organs occur early, often before they are suspected. In 9 per cent of all cases it is impossible to make a clinical diagnosis.

2nd. When in doubt as to malignancy, a complete operation should be arranged for; but before removing the breast an exploratory incision should be made into the growth, and a piece from near its center submitted to a competent pathologist, who, as a rule, will give an accurate report in ten minutes. If malignant, a complete operation should be done immediately. In women past forty the chances in favor of malignancy are as 13 to 1, and should, therefore, be assumed.

3rd. Carcinomata of the sternal hemisphere are less common than similar growths in the axillary half of the gland, but are probably more frequent than they are thought to be. The prognosis is worse in them than in cancers of the axillary hemisphere.

4th. Recurrence being usually in the skin, its removal cannot be too free. Skingrafting, or closure of the wound by plastic flaps, the preferable method, will frequently if not usually, be necessary.

5th. The pectoral muscles, major and minor, should always be removed, regardless of infection, so that all diseased tissues can be removed in one piece, and the axillary dissection both more thoroughly and safely made. Their loss neither increases the mortality, lengthens the convalescence, nor seriously impairs subsequent usefulness of the arm.

6th. The superclavicular glands should be removed if palpably enlarged, or if the topmost axillary glands show microscopical involvement, otherwise their removal is unnecessary.

7th. The wounds of the axillary vessels have been infrequent since the muscles have been removed as a routine practice. When occurring in an aseptic operation they have always been recovered from. Moreover, the edema following is inconstant and transitory, and never a troublesome symptom.

8th. Drainage should always be made.

9th. The three-year limit of Volkman is insufficient, and should be extended to at least five years. Recurrence may occur after ten or more years.

10th. The operative mortality in 2,133 operations performed since 1893, by twenty-one American surgeons, was less than 1 per cent. This seems almost incredible when contrasted with

the 15 to 25 per cent mortality for incomplete operations on the breast in pre-antiseptic days.

Opening the discussion, Dr. Robbins said that in the condition of chronic abscesses the nipple may be retracted and this would suggest carcinoma. An equally suggestive feature was the wasting and apparently carcinomatous cachexia, which are both marked in chronic abscesses of the part.

The differential diagnosis in these cases when of some considerable standing, is a matter involving anxiety on the part of the medical man.

The neuralgic breast with radiating lancinating pains through the mammary gland and down the arm, the eventual nodulation and gradual enlargement of the nodules together with the possible condition of retracted nipple, also presents a state of difficult differentiation.

Dr. Robbins reported a case in point as follows: The patient, a female of middle age, had suffered for some time with pains of much severity in the affected breast. Retraction of the nipple was present and was suggestive of carcinoma.

The part had ben examined by surgeons and pronounced malignant; recovery was made, however, under local medication and strapping.

Another case presenting a fistula of the breast from hardening of the milk duct was pronounced cancerous by an able surgeon. This also made a good recovery after irrigation and mechanical support, patient living for some 12 years thereafter.

Dr. Montgomery thought the diagnosis of carcinoma not difficult in most cases. Chronic mastitis gives the patient much uneasiness; in these cases he found the iodides to be efficient. It was his opinion that the Halsted operation was the most satisfactory.

Dr. Nickerson had noticed frequent recurrence and death after operative procedure for cancer. With regard to Halsted's operations in three cases where this was performed with removal of the breast and axillary glands, the pain after operation was much greater from contracting scar tissue than that pre-operative. Lack of free arm movement was another disadvantage that appeared post operative.

Adjournment.

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The annual meting of the Adams County Medical Society was held in Quincy April 10, 1905, President Nickerson being in the chair.

Those present were: Drs. Ashton, Baker, Burch, Carter, Christie, Ericson, Fletcher, Gilbert, Grimes, Hart, Knok, Koch, Montgomery, Nickerson, Nichols, H. P., Pfeiffer, Rosenthal, Reticker, Robbins, Rice, Williams, J. J., Williams, W. W., and Wells.

Dr. Carl Black, of Jacksonville, councilor for the Sixth District, addressed the Society in his official capacity. He spoke upon medical organization and advanced some excellent ideas for the promotion of interest at the meetings of medical societies. Among other things he suggested joint metings, for the mutual benefit of those meetings, with:

1. Attorneys.
2. Ministers.
3. Teachers.
4. Barbers.
5. Life Insurance Agents.

He touched upon the value and small individual cost of protection against malpractice suits by organization, the average annual individual cost being about $1.00.

The matters were discussed by the Society and a rising vote of thanks was extended to Dr Black.

BRAINERD DISTRICT MEDICAL SOCIETY.

Regular meetings held quarterly. Membership 80.

Officers.

President.....P. H. Oyler, Mt. Pulaski
Vice President.....C. A. Stone, Mason City
Secretary.....H. S. Oyler, Lincoln
Treasurer.....C. C. Reed, Lincoln

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The twenty-ninth annual meeting was held at Lincoln, April 27th, with a good attendance.

In the morning a memorial service for Dr. P. L. Dieffenbacher, of Havana, was conducted by L. L. Leeds of this city.

The following officers were elected: President, P. H. Oyler, Mt. Pulaski; first vice-president, C. A. Stone, Mason City; second vice-president, W. E. Guthrie, Bloomington; third vice-president, C. C. Montgomery, Lincoln; secretary, H. S. Oyler, Lincoln; treasurer, C. C. Reed, Lincoln.

The new members received were Messrs. Bradburn and Cosby, Lincoln; James of Elkhart; McClelland of Beason; Doudall and Wilcox of Clinton.

CASS COUNTY MEDICAL SOCIETY.

Regular meetings are held at Virginia the second Wednesday of each month. Membership 18.

Officers.

President.....J. G. Franken, Chandlerville
Vice-President.....J. M. Hubbard, Virginia
Secretary-Treasurer.....J. A. McGee, Virginia
Delegates to State Society—A. R. Lyle, Virginia; Geo. Bley, Beardstown; J. A. Glenn, Ashland

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The Cass County Medical Society met in Virginia, Wednesday afternoon, April 12. A good representation of physicians of the County being present, also Dr. C. E. Black, District Councilor and Dr. J. A. Day, of Jacksonville. The regular order of business was passed over, after which Dr. Black gave a very interesting talk, outlining methods by which County Societies may maintain membership, also secure good attendance at meetings, advising meeting between the County Society and various municipal boards for discussion of questions pertaining to general sanitation, also school boards and teachers for the purpose of discussion of school sanitation and adolescence in school children. Excellent points were made which will perhaps be acted upon by the Society in the future. Dr. Day also commented on the subjects touched by Dr. Black. Dr. L. M. Sinker, present-

ed an interesting clinical case of Hysteria in a young girl, which developed after a dog bite, the Hysterical paroxysms simulating convulsions in Hydrophobia, which was discussed by Dr. Glenn and others present. This meeting being the annual meeting, officers were elected as above.

Our society while not growing in numbers especially, is however, growing in influence. In the County much good to the physician has already been accomplished and we hope to accomplish even more. Our next meeting will be held in Virginia the second Wednesday in May, at which time Dr. A. R. Lyle will present a paper on Anesthesia in Labor, which will prove of interest to all.

CLARK COUNTY MEDICAL SOCIETY.

Regular meetings are held at Marshall, quarterly.

Membership 12.

Officers.

President .....Dr. Rowland
Vice-President .....Dr. Ryerson
Secretary-Treasurer .....L. J. Weir
Delegate .....Dr. Hall
Censors.....Drs. Hall, Prewett, H. W. Haslit
Committee on Program and Scientific work—Drs. Duncan, Bradley and L. J. Weir.

The Clark County Medical Society met at the Court House, Marshall, April 13, 1905, at 2:00 p. m., called to order by President Hall. Members present: Hall, Rowland, Bradley, Pearce, H. W. Haslit, L. J. Weir, John Weir and Ryerson.

Dr. Rowland reported a case of **Imperforate Hymen in a woman married twenty years.** Dr Hall reported a case of a woman who suffered painful coitus caused by irritation of bladder, accompanied by blood in the urine frequently. Trouble has continued for years.

Dr. Rowland presented an interesting paper on obstetrics, dwelling especially upon management of the ordinary case of confinment, many practical points being made. He described his plan in detail, of waiting on a case. A lengthy and valuable discussion of the whole subject of obstetrics followed, participated in by all present, each man telling in detail just how he manages the ordinary case and also the complications. Eclampsia, Placenta Previa, Post Partum Hemorrhage, etc. The use of chloroform was cussed and discussed and the fact probably remains that some use it too much and others not enough. If only used for an hour during pains only, and never to complete anaesthesia (except possibly in some cases when the last two or three pains are quite severe and perineum rigid) it is permissible in quite a number of cases. Forceps is applied often times without chloroform. Several members very seldom use an anaesthetic. Morphine ⅛ to¼ gr. is used at the beginning of tedious labors frequently lessen suffering and give a few hours rest.

Officers for the ensuing year were elected as above.

Upon motion of Dr. Ryerson, Martinsville was selected to be our next place of meeting, it was considered better to meet in other cities than the county seat, at times.

Nephritis was chosen as the subject for next meeting.

Society adjourned.

DEWITT COUNTY MEDICAL SOCIETY.

Regular meetings are held in Clinton on the second Tuesday of January, April, July and October. Membership 25.

Officers.

President.....J. M. Wilcox, Clinton
Vice-President.....G. M. Robertson, Wapella
Secretary and Treasurer, A. E. Campbell, Clinton
Delegate to State Society.....J. H. Tyler
Alternate.....Geo. S. Edmonson
Censors—W. E. Chalstran, Lane, 1 year; W. E. McClellan, Beason, 2 years; G. G. Dowdall, Clinton, 3 years.

The annual meeting of the DeWitt County Medical Society was held on Tuesday, April 11, in the county court room. The attendance was large. A new constitution was adopted which would harmonize with our state and national constitutions. It was agreed to include the fee bill and a brief historical sketch of the early practitioners of this county and the same published in pamphlet or book form.

Dr. Campbell reported that he had been called to assist Dr. Craig in a case in Logan county. He was told that the man was poor and unable to pay; a few days later he received word from the supervisor of that township that if he would render a bill for his services he would see it was paid. The doctor obeyed the order and in due time received a certified check for the amount. Dr. McClellan said he had practiced in Logan county over twenty years and never had a bill ignored or turned down; they were always paid in full without a word. Dr. Edmonson said in Macon county the bills presented for pauper patients were always paid in full without a word. This was contrasted with the actions of the supervisors of this county who either ignored doctor bills, fought them in the courts or turned them down entirely, and was designated as unfair and unjust.

Dr. Robertson reported an interesting case of albuminuria in pregnancy.

Dr. Wilcox read a paper which was well received.

It was agreed to change the hour of meeting from 1:00 p. m. to 10:00 a. m.

Society adjourned to meet the second Tuesday in July.

MORGAN COUNTY MEDICAL SOCIETY.

Regular meetings are held in Jacksonville the second Thursday of each month.
Membership 12

Officers.

President.....J. W. Hairgrove, Jacksonville
Vice President..Josephine Milligan, Jacksonville
Secretary-Treasurer....D. W. Reid, Jacksonville

The regular meeting held April 13th, at 8:00 p. m., in the assembly room of the public library, was addressed by Dr. J. W. Pettit, superintend-

ent of the tent colony for tubercular patients at Ottawa, Ill., who was heard by an audience which was limited only by the capacity of the room.

Dr. Pettit's address discussed the terrible ravages which consumption is making in this country and the whole world, and of the proper means to be taken for checking its spread. The movement which he represents was explained in full, and it was urged that people in general and especially physicians should use their influence toward widening the scope of the work and making it more effectual. At the conclusion of the lecture about an hour was spent in discussing questions relating to the subject, many of the laity as well as of the profession participating, and all the different phases of the subject were in this manner covered.

PULASKI COUNTY MEDICAL SOCIETY.

Regular meetings are held in Mound City the first Tuesday in January, April, July and October. Membership 16.

Officers.

President.....C. J. Boswell
Vice President.....Monroe Doty
Secretary and Treasurer.....A. W. Tarr

The Society met on Tuesday, April 4th, and elected the above officers. Several interesting papers were read and discussed. Dr. J. F. Hargan was appointed a delegate to the State Society.

DISTRICT MEDICAL SOCIETY OF CENTRAL ILLINOIS.

President.....Amos Sawyer, Hillsboro
1st Vice President....F. J. Eberspacher, Pana
2nd Vice President....Frank Dauld, Shelbyville
Secretary.....R. C. Danford, Pana
Treasurer.....J. N. Nelms, Taylorville

The thirty-first annual meeting of the District Medical Society of Central Illinois convened in Pana April 25th, and was largely attended by physicians from over the central part of the state. The reports of the various officers showed the society to be in better condition both in membership as well as financially, than ever before in the history of the society. The meeting went in session at 11:00 o'clock, when Dr. Mammen, of Bloomington, held an Orthopaedic Clinic at the city hospital. The examination of several patients were made after which the following programme was rendered: "Can the Mind be Diseased," Amos Sawyer, M. D., Hillsboro; "Fractures," Dr. Will Wood, Decatur; "Appendicitis," J. M. Little, Rosemond; "Extra Uterine Pregnancy," Dr. G. N. Kreider, Springfield; "Foreign Bodies in Air Passages," Dr. W. H. Sparling, Moweaqua; H. B. Milhon, Millersville.

Officers were elected as above.

The next meeting will be held in Pana the last Tuesday in October.

DECATUR MEDICAL SOCIETY.

Regular meetings are held in the Decatur Club Rooms the fourth Tuesday of each month Membership 62.

Officers.

President.....E. J. Brown, Decatur
Vice President.....Ellen F. T. Grimes, Decatur
Secretary-Treas.....Benj. Bachrach, Decatur
Board of Censors: E. A. Morgan, F. M. Anderson, J. Stebbins King.
Program Committee: W. C. Bowers, Chairman; E. J. Brown, W. C. Wood, A. Wilhelmy, L. M. Barnes.
Delegate to the State Society: Cass Chenoweth, W. C. Bowers, E. J. Brown.

The fourth annual banquet of the Decatur Medical Society was given April 25th at the St. Nicholas hotel. An elaborate dinner was served to the fifty members and guests who were present. Dr. L. Barnes, retiring president of the society, acted as toastmaster.

Dr. Hugh T. Patrick, of Chicago, was the guest of honor, and gave an address on the diagnosis of hysteria.

A number of guests from Springfield were present including Drs. E. E. Hagler, L. C. Taylor, S. E. Munson, R. D. Berry and B. B. Griffiths.

GALLATIN COUNTY MEDICAL SOCIETY.

Regular meetings are held the second Wednesday of each month. Membership, 16.

Officers.

President .....J. N. Bourland, Equality
Vice President .....I. N. Foster, New Haven
Sec. and Treas...W. H. Grattan, Shawneetown

The Gallatin County Medical Society met in regular session at Dr. Bowling's office in Shawneetown, April 12, 1905. In the absence of President Bourland, Dr. Foster presided. The secretary read the minutes of last meeting which were approved. Members present, Drs. T. A. Jones, Paul Sherman, A. B. Capel and J. W. Bowling.

A paper, title, "Summer Diarrhoea in Children," was read by Bowling and discussed by all present.

The above officers were elected by acclamation for the ensuing year. On motion, the president was instructed to appoint a delegate to the Illinois State Society meeting May 16-18, 1905.

Drs. Grattan, Sherman and Capel were selected to prepare a program for the next meeting which will be held at New Haven May 10th, at 1:00 o'clock p. m. We hope to have a good attendance at this meeting.

JO DAVIESS COUNTY MEDICAL SOCIETY.

Officers.

President.....A. C. Czibulka, Warren
Vice President.....T. J. Stafford, Stockton
Secretary and Treasurer..D. G. Smith, Elizabeth
Censors: H. F. Gunn, H. B. Gratiot, C. E. Wright.
Delegate, U. S. Lewis; alternate, H. T. Godfrey.
Membership, 30.

The Jo Daviess County Medical Society held its fifth anniversary meeting at the Grand Army hall, Warren, Ill., April 20, 1905, the president

in the chair and the following members present: Nadig, Keller, Tyrrell, Lewis, Kreider, Smith I. C., Czibulka, Smith D. G., Phillips, Buckman, Gratiot, Grassan, Wright, Gunn, with Dr. Kea of Stockton as a visitor.

Minutes of previous meeting read and approved.

The first essayist being absent, a motion was made to go ahead with the business part of the program.

The president appointed a committee composed of Lewis, Kreider, Smith I. C., to divide the county members into four districts for entertainment, also an auditing committee composed of Nadig, Tyrrell and Keller.

Dr. Czibulka moved that $5.00 be added to the secretary's salary for the past year. Motion carried.

The secretary moved that the chair appoint a nominating committee to nominate two candidates for each office. Motion lost.

The committee, on dividing the county then made the following report:

Galena Division—Godfrey, Gunn, Beuch, Weirick, Smith W. A., Jacobs.

Warren Division—Czibulka, Keller, Grassan, Phillips, Buckman.

Elizabeth Division—Smith D. G., Nadig, Miller, Egan, Wright.

Stockton Division—Smith I. C., Stafford, Lewis, Kreider, Tyrrell.

The auditing committee presented the following report:

Cash on hand at beginning of year	$ 28 32
Received for dues	125 00
Total	$153 32
Expenditures for year just ending including State Society dues, printing and secretary's salary	$ 84 90
Balance on hand	$ 68 42

Dr. Grassan then read a paper on "Diabetes Mellitus." The discussion was opened by Dr. Czibulka, who suggested paraffine. Dr. Phillips, Kreider, Keller, folloiwed with some remarks.

Adjourned for dinner.

The president delivered his annual address.

Election of officers was next taken up and resulted as above.

Paper read by D. G. Smith on "Neuritis." Discussed by Kreider and Phillips.

Dr. Lewis then moved and was seconded by Kreider, "That inasmuch as there was money in the treasury the dues should now be reduced to $3.00 per annum." This motion was declared to be unconstitutional, and Dr. Tyrrell then moved that the secretary donate $2.00 to each member as he pays his year's dues. After some discussion the motion was voted on and was carried.

Galena was selected as the next place of meeting.

SANGAMON COUNTY MEDICAL SOCIETY.

Regular meetings are held at the Lincoln Memorial Library in Springfield the second Monday of each month at 8 p. m. Membership 75.

Officers.

President ..... W. O. Langdon, Springfield
Vice President ..... R. D. Berry, Springfield
Secretary-Treasurer ..... C. R. Spicer, Springfield
Directors, S. R. Hopkins, E. E. Hagler, A. O. Taylor

The Sangamon County Medical Society held its regular monthly meeting in the Lincoln Library April 10, 1905.

The president and vice president being absent the meeting was presided over by Dr. Munson. There were sixteen in attendance including Drs. S. W. Shurtz of Champaign, C. R. Bell and J. H. Utley of Thayer.

Minutes of the February meeting were read and approved. Dr. Bell's name was proposed for membership. Drs. A. R. Trapp and W. A. Halbert were elected to membership. Bills covering the current expenses of the society for March and April amounting to $10.75 were read and ordered paid.

Dr. Kreider offered the following resolution:

Resolved, that it be the sense of the Sangamon County Medical Society that our representatives in the 44th General Assembly be requested to oppose the passage of Senate Bill No. 311 and House Bills No. 228 and 229. Dr. Hopkins offered to amend the resolution by having a committee appointed to explain to the said representatives why the above bills should be opposed. The motion as amended carried and the chair appointed Drs. Kreider, Hopkins and A. D. Taylor on the committee.

The literary exercises of the evening consisted of papers on the folowing subjects: "The Faucial Tonsil," by Dr. A. E. Prince and "Paroxysmal Tachycardia," by Dr. A. L. Brittin.

Dr. Prince emphasized the importance of thoroughness in removing adenoi, saying that the unsatisfactory results so often following the operation were due to obstruction remaining after the operation. This obstruction often consists in a thickened turbinated bone, a deflected septum or even a portion of the adenoid mass. An anesthetic should always be used. The author has devised an instrument which he introduces through the nares and bites off or tears out such obstructing bodies. He said that the symptom of respiratory obstruction was more often caused by adenoids than tonsils.

He prefers total extirpation of the tonsil to tonsilotomy since the stump of the severed gland does not always shrink and may become a port of entry to infection. This operation he performs by grasping the tonsil with an Ingal's forcep and clipping away the base with a scissors. The paper was practical and interesting and was generally discussed.

Dr. Britin reported an interesting case of true paroxysmal tachycardia occurring in a woman somewhat past middle age. Often, while in good health, she would be seized with a paroxysm during which the pulse would reach 180 per minute. The duration of the attacks varied from a few minutes to several hours. During the seizure the patient felt a sense of fulness and tension in the head which was re-

lieved at once when the attack had passed. Her heart shows no organic lesion. The case is an historic one, having engaged the efforts of several able physicians, but so far all therapeutic efforts have failed. Several similar cases were reported during the discussion, but all were agreed that as yet no efficient treatment is known for this enigmatical condition.

The meeting closed in form to meet in one month.

ST. CLAIR COUNTY MEDICAL SOCIETY.

Regular meetings are held at Priester's Park, Belleville, the first Thursday of January, April, July and October. Membership 81.

Officers.

President ..... C. H. Starkel
Vice President ..... W. E. Wiatt
Treasurer ..... A. E. Hansing
Corresponding Secretary ..... C. W. Lillie
Recording Secretary ..... B. H. Portuondo

The St. Clair County Medical Society met in regular session at Priester's Park on January 5, 1905, with President Starkel in the chair.

In the absence of the recording secretary Dr. W. S. Wiatt was appointed secretary pro tem.

The amendment to the constitution which was submitted at the last meeting proposing a change of times of meeting from monthly to quarterly, was read, and on motion was adopted.

The report of the treasurer was read, and on motion was accepted.

A vote of thanks was tendered Dr. Hansing for his services.

Dr. Hansing reported a case of spinabifida.

Dr. Fairbrother reported a case of typhoid fever.

Dr. Zimmermann reported a case of typhoid fever followed by periostitis of the tibia. Also a case of remittent fever.

Dr. W. E. Wiatt reported a case of typhoid fever. These cases were all thoroughly discussed by the members present.

On motion a committee on scientific program was appointed as follows: Drs. Lillie, Fairbrother and J. W. Twitchell.

Society adjourned.

The St. Clair County Medical Society met in annual meeting at Priester's Park, on Thursday, April 6, 1905, with Dr. W. E. Wiatt, vice-president, in the chair; Dr. Portuondo, recording secretary; Dr. Lillie, corresponding secretary; Dr. Hansing, treasurer.

The report of the treasurer was presented and accepted.

On motion a committee of three, consisting of Drs. Gunn, Campbell, and Raab, was appointed to nominate officers for the ensuing year.

The committee reported the following names: For president, W. E. Wiatt; for vice-president, H. E. Wangelin; for corresponding secretary, Geo. E. Hilgard; for treasurer, J. W. Rendleman; for recording secretary, W. C. Spannagel.

On motion the report of the committee was accepted and the committee discharged, and the secretary instructed to cast the vote of the Society for those named by the committee. This was done and they were declared elected.

A vote of thanks was tendered the retiring officers for the very efficient service they had rendered the Society.

Dr. W. S. Wiatt read a paper on "head injuries."

The Board of Censors reported favorably on the application of Dr. U. S. Short, of East St. Louis, and he was accordingly elected to membership.

Dr. J. W. Twitchell reported a case of recovery from a gunshot wound of the abdomen with perforation of the intestines, without operation. The report is as follows: On April 10, 1902, my brother and myself were called to attend Mr. L., and found him suffering from two gunshot wounds of the abdomen. Upon examination we found that the gun from which the shots were fired was of twenty-two calibre. The physical examination showed that one bullet had entered the body about three inches below, and two inches to the right of the ensiform cartillage. Probing was not employed beyond ascertaining the direction taken by the bullet after it entered the body. This bullet followed the belly muscles around the left side of the abdomen and lodged in the lumbar muscles of the back where it could be easily located by the tumor which it produced, and also by the X-rays by placing the fluoroscope to the back. The other ball entered the body about four inches below, and about five and one-half inches to the right of the tip of the ensiform cartillage, and ranged downward and to the right, but could not be located. Patient complained of slight pain in the region of the cecum. Shock was not severe, so we decided to put the patient to bed and wait developments; withholding all food, water only being given in small quantities, and at regular intervals. All bowel movements were watched, and as no unfavorable symptoms developed this treatment was continued. On the eighth day the bullet was found with the stools, having passed per rectum. The same treatment was continued for eight days longer, when food was allowed. On the twentieth day after the accident recovery was complete and the patient was discharged. Three years have now elapsed since the accident and no unfavorable abdominal symptoms have developed.

Dr. Campbell, in commenting on this case said it was one of the happiest outcomes of which he had ever heard.

Dr. Little said it was a very rare occurrence and that it was interesting to have such put on record.

Dr. Fairbrother said it was a most remarkable case and worthy of record.

Announcement was made that refreshments were ready, and on motion the society adjourned.

VERMILION COUNTY MEDICAL SOCIETY.

Regular meetings are held the second Monday of each month in the city hall, Danville, at 8:30 p. m. Membership 71.

Officers.

President ..... F. N. Cloyd
Vice President ..... S. L. Landauer
Secretary-Treasurer ..... C. E. Wilkinson
Board of Censors—H. F. Becker, Joseph Fairhall and Benj. Gleeson.
Delegates—T. E. Walton and R. A. Cloyd.

The Vermilion County Medical Society was called to order in the council chamber April 11th

at 8:30 p. m., and in the absence of the president A. J. Leitzbach presided.

The minutes of the last meeting were read and adopted.

Members present—A. J. Leitzbach, Leroy Jones, J. M. Wilkins, Joseph Fairhall, H. F. Becker, Robt. McCaughey, A. M. Miller, C. P. Hoffman, E. M. Smith and C. E. Wilkinson.

The report of the committee on printing constitution was adopted and the committee discharged. The secretary is now supplied with constitutions and by-laws for distribution to the members. The bill for printing constitution and by-laws was presented and ordered to be paid by the secretary.

The first paper of the evening was presented by C. E. Wilkinson on the "Relation of the Heart and Kidneys in Disease."

After discussion by Drs. Fairhall, Miller, McCaughey, Jones, Wilkinson and others the discussion was closed by the essayist.

The second paper on the "Treatment of Nephritis" was ably presented by Dr. Leroy Jones. The subject was presented by giving the classification of the different forms of Nephritis and then took up the different points in the treatment, as to diet, medicine and the importance of the manner of living in those suffering from any form of Nephritis. The subject was presented in an able and instructive manner and a discussion followed in which H. F. Becker and others took part. The essayist closed the discussion.

Dr. Leitzbach reported an interesting case in which high temperature 103° to 105° continued for several weeks and was not affected by the use of antipyretics and cold baths. Widall and Diazo tests were negative. A positive diagnosis was not made in the case.

Dr. Robt. McCaughey reported an interesting case of hemianesthesia in which a diagnosis was made of toxic condition producing the anesthesia.

The society adjourned to meet the second Monday evening in May.

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The regular monthly meeting of the Vermillion County Medical Society was held in the Council Chamber March 13, 1905, with the president in the chair.

The minutes of the last meeting were read and adopted.

The Committee on County Fee Bill reported recommending the Tri-County Fee Bill for County Fee Bill. After some discussion the bill was referred back to the committee to take further action and report at the next meeting.

The committee on printing the constitution and by-laws reported and the society instructed the committee to have the printing done before the next regular meeting.

A resolution was passed recommending to his Excellency, Gov. Chas. S. Deneen, the name of Dr. J. W. Pettit for the position of secretary of the State Board of Health.

A communication from the secretary of the State Board of Health in regard to containers for sending specimens to the laboratory established by the Board of Health for bacteriological research was read after which the secretary was instructed to send for a supply of the containers and have in readiness for physicians use.

The first paper of the evening was presented by Dr. Benj. Gleeson on "Relation of Iritis to Systemic Diseases, its Diagnosis and Treatment."

The essayist presented the subject in a very interesting manner, laying stress on the importance of an early diagnosis.

The discussion was opened by Dr. I. E. Huston followed by Dr. E. E. Clark and closed by Dr. Gleeson.

The second paper of the evening on "Indications and Contra-Indications for Operation on the Mastoid," was ably presented by Dr. E. E. Clark. The essayist emphasized the necessity of operation on all cases of chronic suppurative Otitis Media and said that the operation if carefully performed always proved successful.

Dr. Benj. Gleeson opened the discussion stating that statistics were not sufficiently favorable to operative proceedures to justify operating on all cases but thought that operation was indicated at times. Dr. Huston followed in the discussion and the discussion was closed by the essayist.

Members present—F. N. Cloyd, Joseph Fairhall, E. E. Clark, H. F. Becker, A. J. Leitzbach, R. A. Cloyd, W. A. Lottmann, I. E. Huston, E. B. Cooley, Solomon Jones, M. Sahud, Benj. Gleeson, C. P. Hoffman, H. S. Babcock, V. C. T. Kingsley, S. M. Black, A. M. Miller and C. E. Wilkinson.

Visitor—Dr. Goodwin of Fairmount.

Meeting adjourned to meet the regular meeting in April.

WAYNE COUNTY MEDICAL SOCIETY.

Regular meetings held in Fairfield the second Wednesdays of January, April, July and October. Membership, 20.

Officers.

President ..... W. M. Johnson, Johnsonville
Vice President ..... J. D. Harlan, Fairfield
Secretary ..... J. P. Walters, Fairfield
Treasurer ..... F. Bean, Fairfield
Censors: T. J. Hilliard, Jeffersonville; W. C. Sibley, Fairfield; B. E. Garrison, Wayne City.

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The society met in Drs. Walters and Harlan's office, Wednesday, April 12, 1905, President W. M. Johnson in the chair.

The regular program was not carried out but the afternoon and evening was spent in reminiscences, detailing cases and narrating incidents by different ones present which was highly relished by all those present.

Before separating it was decided to hold a meeting some time in May to elect officers for the ensuing year and to transact whatever business may come before the society.

The annual dues were paid by those present and the society adjourned to meet in Fairfield in May, the exact date to be fixed later.

McLEAN COUNTY MEDICAL SOCIETY.

Regular meetings are held in Bloomington the first Thursday of each month. Membership 95.

Officers.

President.....A. L. Fox, Blomington
Vice President.....W. R. Shinn, Chenoa
Sec'y-Treas.....Robert A. Noble, Bloomington
Board of Censors: J. K. P. Hawks, chairman; E. L. Brown and J. L. Yolton.
Delegate to State meeting, F. C. Vandervort.

The regular meeting of the McLean County Medical Society was called to order by the President, F. C. Vandervort, at 8:00 p. m. The minutes of the previous meeting were read and approved.

The Secretary reported for the Committee on Publication, that the Pantagraph Printing and Stationary Co., were the best equipped and had submitted the most satisfactory price on the estimate of the publication of the History of the McLean County Medical Society. Upon motion of Dr. J. B. Taylor, the incoming president and the present committe were instructed to complete arrangements with the above company and have the history published.

Dr. W. E. Guthrie reported for the Committee on Banquet for the May meeting. He was instructed to charge $1.50 per ticket. Any expense in excess of the receipts from the sale of tickets is to be paid for out of the treasury.

A communication from Dr. C. E. Black was read stating the report that Dr. Black had made to the council regarding the report of the Committee of Arrangements for the last Annual meeting of the Illinois State Society. Same was ordered placed on file.

Communication from Dr. C. E. Black regarding the proposed bill now before the Legislature to place an Osteopath on the State Board of Health. A copy of the letter sent to each of the members from this district was read together with the impertinent reply of the Dishonorable Senator Stubblefield.

The report of the treasurer was read, showing a balance in the treasury after all bills to date were paid, of $126.65.

Dr. C. E. Chapin moved that the secretary be allowed $25.00 for his services as secretary-treasurer for the year 1904; seconded by Dr. T. W. Bath. Motion carried.

This being the annual meeting of the Society the election of officers for the ensuing year was held and resulted in the election of the above members to serve the society for the year 1905.

This being the completion of the regular order of business, Dr. G. N. Kreider, Editor of the Illinois State Medical Journal, was introduced and presented an interesting and instructive paper on "Senile Gangrene."

Dr. Kreider laid special stress on the importance of making the amputation high above the seat of the gangrenous area and emphasized the point that it was useless to wait for the so-called line of demarcation.

The series of cases presented by Dr. Kreider shows most excellent results, only one case having died in less than one year following the operation.

The Society expressed its thanks to Dr. Kreider for the very excellent presentation of this subject and congratulated him upon his excellent result.

MASON COUNTY MEDICAL SOCIETY.

Regular meetings held monthly in the various towns of the county. Membership 10.

Officers.

President.....H. H. Hanly, Havana
Vice President.....C. A. Stone, Mason City
Secretary-Treasurer....A. L. Cook, Mason City
Delegate to State Society, A. G. Servoss, Havana

The second quarterly meeting of the Mason County Medical Society was held in Havana April 3rd. The above officers were elected for the present year.

ROCK ISLAND COUNTY MEDICAL SOCIETY

Regular meetings are held bimonthly at Rock Island on the second Tuesday. Membership 56.

Officers.

President.....G. L. Eyster, Rock Island
1st Vice President.....F. H. Gardner, Moline
2nd Vice President.....J. H. Long, E. Moline
Secretary.....R. Dart, Rock Island
Treasurer.....J. E. Asay, Rock Island
Official Reporter.....F. H. First, Rock Island

The annual meeting of the Rock Island Medical Society was held at the Harper House Rock Island, on Tuesday evening, April 11.

There were thirty-one members present. This being the annual meeting, no set program had been prepared, and the evening was devoted to the business of the society. The officers as above were elected for the ensuing year.

The retiring President, Dr. L. D. Dunn, was elected as our delegate to the State Society, with Dr. G. A. Wiggins as alternate.

The report of the treasurer showed all bill paid, with a balance of $43.00 on hand.

After the meeting a very enjoyable luncheon was served.

New Incorporations.

The Secretary of State at Springfield has licensed the following corporations:

Liqueadium company, Chicago; capital, $25,000; manufacturing medical preparations; incorporators, George W. Matthews, Walter Stokes and Drummon O. Scott.

Anti-Septox Medicine company, Chicago; capital increased from $5,000 to $10,000.

Methodist Episcopal Deaconess society, Chicago; number of directors decreased from eighteen to five.

Illinois X-ray and Electro-Therapeutic laboratory, Chicago; dissolved.

The Surgical Publishing Company of Chicago, Chicago; capital, $25,000; print and publish medical books, journals, etc.; incorporators Frank H. Martin, Albert Goldspohn, Frederick A. Besley.

La Salle Avenue Hospital and Training Shool for Nurses, Chicago; name changed to Lincoln Park Hospital and Training Schol for Nurses; capital stock increased from $2,500 to $60,000.

The Illinois Medical Journal.

The Official Organ of the State Medical Society.

MAY, 1905.

NEXT ANNUAL SESSION, ROCK ISLAND, MAY 16, 17, 18, 1905.

OFFICERS:

PRESIDENT—W. E. QUINE, Chicago.
FIRST VICE PRESIDENT—H. C. MITCHELL, Carbondale.
SECOND VICE PRESIDENT, J. F. PERCY, Galesburg.
SECRETARY—EDMUND W. WEIS, Ottawa.
TREASURER—EVERETT J. BROWN, Decatur.
EDITOR—GEORGE N. KREIDER, Springfield.

SECTION ONE.

Practice of Medicine, Medical Specialties, Materia Medica, Therapeutics, Etiology, Pathology, Hygiene, State Medicine and Medical Jurisprudence.

M. S. Marcy ..... Chairman
Peoria.
Fred Zapffe,
1764 Lexington st., Chicago.

SECTION TWO.

Surgery, Surgical Specialties, and Obstetrics.

Geo. L. Eyster.....Chairman
Rock Island.
W. H. Wilder ..... Secretary
103 State st., Chicago.

Committee on Prevention of Tuberculosis.

J. W. Pettit, Ottawa.
C. L. Mix, Chicago.
J. F. Percy, Galesburg.

Committee on Public Policy and Legislation.

Frank Billings, Chicago.
Carl E. Black, Jacksonville.
J. W. Pettit, Ottawa.
The Pres. and Sec'y, Ex-Officio.

Committee on Scientific Work.

M. S. Marcy, Peoria.
Geo. L. Eyster, Rock Island.
The Pres. and Sec'y, Ex-Officio.

The figures before the names of the Councilors refer to the Councilor Districts.

The Council.

(1) J. H. Stealy, Freeport.
(2) W. O. Ensign, Rutland.
(3) M. L. Harris, Chicago.
(4) O. B. Will, Peoria.
(5) J. Whitefield Smith, Bloomington.
(6) C. E. Black, Jacksonville.
(7) E. E. Fyke, Centralia.
(8) W. K. Newcomb, Champaign.
(9) J. T. McAnally, Carbondale.

UNUSUAL POSITION OF EDITORIAL ITEMS.

The Editorial portion of the Journal is placed where it is this month in order to give our readers the latest possible information on the matters of interest before the legislature. We are pleased to say that no legislation obnoxious to the medical profession has gotten through this session.

THE ROCK ISLAND MEETING.

For its 55th annual meeting the State Medical Society will convene at Rock Island, on the banks of the Mississippi, opposite Davenport on the 16th, 17th and 18th of May. The three cities together form a community of 75,000 and are beautifully located on the beautiful and historic stream. The United States Government maintains an immense arsenal on the island at this point, which is a great attraction. The committees have prepared a program of literary exercises and entertainments worthy of the Society and its members and all may be assured of a hearty welcome and a pleasant time.

A great deal of important business will be transacted at this session. Each Society should see that it is represented by at least one member in the house of delegates at each and every one of its sessions. An alternate should be on hand to take the place of the

regular delegate should the latter, for any reason, be called away.

The railway rate, as usual, will be one and a third on the certificate plan. Be sure to secure your certificate when purchasing the ticket and to turn this over to the representative of the railway company as soon as possible after reaching Rock Island.

OSTEOPATHIC BILL KILLED.

During the entire session of the General Assembly, now drawing to the close, there has been a numerous, if not strong, lobby of osteopathists besieging the members of the Senate and House to pass bills permitting them unusual and unjust privileges. They have spent a great deal of money in postage and stationery and the progress made was indicated by the vote received in the Senate, which caused them to believe that Senate Bill No. 311, introduced by Mr. Chaffee, would also pass the House. However, about this time, the medical profession woke up to the necessities of the case and from every county came an avalanche of letters, telegrams, resolutions and personal appeals, which soon placed matters in proper shape. The hearing on this bill took place Thursday, May 4. Dr. W. A. Evans made a very able argument against the bill, as did also Dr. G. W. Webster, and when the motion was made that the bill be not recommended to the House for passage, it was carried by an overwhelming majority and the matter was disposed of for this session at least. When all things are considered, this result is particularly gratifying to the organized profession of the State. In the first place, the legislatures of a number of States have been more susceptible to the blandishment of the bone setters and have given them more or less recognition. In the second place the contest in Illinois developed a condition of affairs which lead to the belief that there was actual danger of the passage of some sort of a bill favorable to osteopathy. This victory shows again the value of an active organization and demonstrates that the profession can be relied upon when a proper appeal is made to it.

EXCURSION TO PORTLAND.

Arrangements are in progress for special cars for Illinois tourists to go to the Portland meeting. It is proposed now to have special Pullman sleepers leave Springfield about noon June 29th, breakfast at St. Paul, and spend the day in St. Paul and Minneapolis visiting the many points of interest about the twin cities. Ft. Snelling, Lake Minnetonka, Falls of Minnehaha, etc., and leave in the evening for the Yellowstone National Park, where five and one-half days will be spent, and then on to Seattle and Portland. The fare from Springfield will be $53.50; sleeping car, $14; tour through the Park, $49.50.

PIN PRICKINGS.

The *American Medical Journalist,* a little advertising publication hailing from New York, is busily engaged in caricaturing the editor of the Journal of the American Medical Association in attempted revenge for the establishment of the Council of Pharmacy and Chemistry. Mention is made of the facts only to offer an explanation. The *Journalist* is conducted by Mr. O. Gorman, an advertising agent of New York who is son-in-law to Dr. J. J. Lawrence proprietor of the *Medical Brief* and of various drug factories. Dr. Simmons of course can stand it, and the medical profession will not mind this opposition to its best interests when the source is fully understood.

The founding of the Council of Pharmacy and Chemistry by the American Medical Association bids fair, after the necessary preliminary period of friction, to be rated one of the greatest forward steps ever taken by the medical profession of America.

WHEREAS, The physicians of Stephenson County, Illinois, are not in sympathy with certain bills now before the Legislature of our State asking for special legislation, as set forth in Senate Bills Nos. 269 and 311, soon to be up for vote,

Resolved, That we the members of the Stephenson County Medical Society, urge the representatives from this Senatorial district to use their influence, and co-operate with the medical profession in maintaining the standard of medical requirements in our State, and not permit recognition of any sects or isms, whose excuse for existence is in name only. Medicine is broad enough to take in all good, reliable therapeutic measures, of tried and well known value, and an effort to restrict to certain lines of treatment in all cases is not proper treatment in a large per cent of them, and an imposition on that per cent of the public.

But it further resolved that a copy of these resolutions be furnished each of the Representatives from this district and a copy sent to the Illinois State Medical Journal for publication. Signatures:

W. J. RIDEOUT, Pres. D. C. L. MEASE,
E. J. TOREY, S. J. BEST,
C. M. HILLEBRAND, J. A. POLING,
M. J. PLEES, B. A. ARNOLD,
M. W. BAUMGARTNER, E. H. BEST,
J. H. FIRESTONE, L. G. VOIGT,
W. L. KARCHER, M. B. STIVER,
WM. F. BUSHNELL, WILLIAM B. PECK,
J. H. STEALY, E. E. BURNELL,
J. S. CLARK, R. F. HAYES,
ROBERT J. BURNS, J. C. BURBANK,
J. F. FAIR, A. E. SMITH,

NOTICE: Members will please take notice that the railroad rate to Rock Island from St. Louis and all points in Illinois will be one and one-third (1⅓) fare for the round trip, on the CERTIFICATE plan. Procure your certificate at time of purchase of ticket. The certificate must be presented to the railroad joint agent at the meeting to have it viséd. A fee of twenty-five (25) cents will be charged by the agent. Tickets are good for three days before the meeting and three days after the meeting.

E. W. WEIS, *Secretary*.

OFFICIAL PROGRAM.

ORDER OF PROCEEDINGS.

Registration Office—First Methodist Church, Cor. 5th Ave. and 19th St.

First Day—Tuesday, 9:00 A. M.

I. Call to Order in General Session by the president (Methodist church)—William E. Quine, Chicago.

II. Report of Committee on Arrangements—C. Bernhardi, Chairman, Rock Island.

III. Announcement by the President.

IV. 9:15 a. m. Call to Order of Section One in Public Library Hall, 4th Ave. and 19th St.

V. 9:15 a. m. Call to Order of Section Two, in Methodist Church.

VI. 1:00 p. m. Adjournment.

First Day—Afternoon.

VII. 2:00 p. m. Call to Order for Continuation of Sections One and Two.

VIII. 2:00 p. m. Call to Order of the House of Delegates by the President, in Assembly Room of the Public Library.

IX. 2:30 p. m. Trolley ride for visiting ladies through Davenport, Moline and Rock Island, with short stop at the Watch Tower Inn for light refreshments.

First Day—Evening.

X. 8:00 p. m. Call to Order by the First Vice President, H. C. Mitchell, Carbondale, (Illinois Theatre 2nd Ave. and 16th St.)

XI. Invocation—Rev. R. B. Williams, D. D., Rock Island.

XII. Vocal Vocal Solo—Mrs. Pauline Waltman Brandt, Chicago.

XIII. Address of Welcome—Hon. Geo. W. McCaskrin, Mayor of Rock Island.

XIV. Address of Welcome on Behalf of the Rock Island County Medical Society—Geo. L. Eyster, Rock Island.

XV. Response on Behalf of the Society—President Wm. E. Quine, Chicago.

XVI. President's Annual Address—Wm. E. Quine, Chicago.

XVII. Address; Section One—J. W. Pettit, Ottawa.

Second Day—Wednesday Morning.

I. 9:00 a. m. Call to Order for Continuation of Section One (Library Hall) and Section Two (Methodist Church).

II. 10:00 a. m. Carriage Ride for Visiting Ladies to Rock Island Arsenal.

III. 1:00 p. m. Adjournment.

Second Day—Afternoon.

IV. 2:00 p. m. Meeting of the House of Delegates.

V. 3:00 to 6:00 p. m. Reception for visiting ladies given by Mrs. C. Bernhardi at her residence, 6th Ave. and 18th St., assisted by Dr. Emily Wright, Dr. Emma Morgan, Mrs. Craig, Mrs. Comegys, Mrs. Eyster, Mrs. DeSilva, Mrs. First, Mrs. S. B. Hall, Mrs B. F. Hall, Mrs. Ludewig and Mrs. Sala.

VI. 6:30 p. m. Excursion and Reception on Steamer "W. W." Refreshments on the Boat.

Third Day—Thursday Morning.

I. 9:00 a. m. Call to Order of Sections, Papers and Discussions.

II. 10:00 a. m. Call to Order in General Session (Methodist Church) by the President to Receive Report of House of Delegates.

III. 1:00 p. m. Adjournment.

Third Day—Afternoon.

IV. 2:00 p. m. Call to Order for Completion of Sections One and Two.

V. Introduction of the President Elect.

VI. Final Adjournment.

PROGRAM.

SECTION ONE.

Practice of Medicine, Medical Specialties, Materia Medica, Therapeutics, Etiology, Pathology, Hygiene, State Medicine and Medical Jurisprudence.

Chairman.....M. S. Marcy, Peoria
Secretary.....Fred Zapffe, Chicago
Address.....J. W. Petit, Ottawa

What we must Learn and Unlearn in the Treatment of Tuberculosis.

1. Present Status of Serum Therapy.....E. R. Larned, Chicago
2. Practical Significance of Certain Common Symptoms in the Upper Abdomen.....J. F. Percy, Galesburg
3. Indormescent Shock..H. T. Patrick, Chicago
4. The Consideration of Late Hereditary Syphilis.....R. R. Campbell, Chicago
5. Percentage Modification of Milk in the Home.....Chas. R. Spicer, Springfield
6. The Tuberculosis Problem in Illinois..Homer M. Thomas, Chicago
7. The Importance of Diet in the Treatment of Tuberculosis.....Miss Adella Sater, Ottawa
8. Mixed Infection in Tuberculosis with some Consideration as to Treatment.....Ethan A. Gray, Chicago
9. Climatic Treatment of Tuberculosis with Special Reference to Colorado.....C. L. Wheaton, Chicago
10. Typhoid Fever....G. G. Craig, Rock Island
11. Differential Diagnosis of Small-pox (Lantern Slides).....Heman Spaulding, Chicago
12. The Value of Isnordia Palustris in the Treatment of Erysipelas—Report of Cases..H. C. Mitchell, Carbondale
13. Pericarditis.....J. H. Bacon, Cleveland, O.
14. Scrofula.....H. G. Anthony, Chicago
15. The License and Control of the Practice of Medicine in the State of Illinois.....Geo. W. Webster, Chicago
16. Diagnosis of Chronic Nephritis.....Chas. L. Mix, Chicago
17. Ocular Manifestations of Chronic Nephritis.....A. R. Elliott, Chicago
19. Results of Surgical Treatment of Chronic Nephritis.....A. H. Ferguson, Chicago
20. Report of Three cases of Intermittent Claudication....S. R. Pietrowicz, Chicago
21. The Glycosuria of Hepatic Insufficiency.....A. C. Crofton, Chicago
22. Respiratory Oxidation Stimulants in Nephritis, Pulmonary and Allied Crises.....Geo. F. Butler, Chicago
23. Febrile Symptoms of Hepatic Syphilis.....Jos. L. Miller, Chicago
24. Parenchymatous Keratitis and Subsequent Irido-Chroiditis with Loss of Vision.....Chas. H. Brobst, Peoria
25. Syphilitic Meningitis in Children....W. J. Butler, Chicago
26. Educational Treatment of Neurasthenics.....Chas. D. Center, Quincy
27. Gastric Fatigue.....F. B. Turck, Chicago
28. Some Phases of Disturbed Metabolism.....R. W. Webster, Chicago
29. Some Eye Problems the General Practitioner is Called on to Solve.....R. J. Tivnen, Chicago
30. Variola.....L. A. McFadden, Peoria..
31. ..Poisoning from Oil of Wintergreen, ...F. C. Vandervort, Bloomington
32. Cardiospasm or Idiopathic Dilation of Esophagus.....B. W. Sippy, Chicago
33. Title later.....S. W. Miller, Peoria
34. Air examinations: Their Importance and Results.....A. Gehrman, Chicago
35. Intestinal Parasites.....F. Smith, Urbana

THE PRACTICAL SIGNIFICANCE OF CERTAIN SYMPTOMS IN THE UPPER ABDOMEN.

By J. F. Percy, M. D., Galesburg, Ill.

Introduction: The overlooking, in this region, of the pathology on which these symptoms are based, is one of the strange chapters in the history of diagnosis.

The common symptoms are pain due to cholecystitis, ulcer of the stomach, and of the duodenum, together with the formation of gas due to inhabited peristalsis. Vomiting is also mentioned; but nausea is a more prominent symptom than the former. Bleeding is also to be noted as one of the symptoms.

The significance of these can best be determined by percussion, palpation, and noting costal resistance, especially in the right side. Laboratory methods are of confirmatory value only. Alone they cannot make the diagnosis.

The periodicity of the attacks from ulcer of the stomach and the duodenum are insisted upon, as is also that fact that a cholecystitis or an ulcer of the stomach will account for many of the chronic lesions of the liver and the pancreas. Both of these facts are new to the literature of this great subject.

INDORMESCENT SHOCKS.

Hugh T. Patrick, Chicago.

The author calls them "indormescent" because

they ordinarily occur just as the patient is falling asleep. The shocks may be divided roughly into motor and sensory. Mild motor shocks, or simple starts, may be regarded as normal, but in some persons they reach a degree, which is pathological and in others attain a violence sufficient to make them worthy of medical consideration and special treatment. The sensory form may affect general sensation or the special senses. The manifestation occurs as a symptom of functional disease and in the vast majority of cases is of no grave significance, although the shock is a most alarming sensation for the patient. Illustrative cases. Treatment.

THE GLYCOSURIA OF HEPATIC INSUFFICIENCY.

Alfred C. Croftan, Chicago.

Abstract—The frequency of sugar excretion in functional disorders of the liver. The dangers of treating a patient afflicted in this way as a diabetic. The causes, symptoms and treatment of this variety of non-diabetic glycosuria.

THE EDUCATIONAL TREATMENT OF NEURASTHENIA—Abstract.

Chas. D. Center, Quincy.

A. The author claims that drug treatment alone is practically valueless; that while Brower's definition of 'Neurasthenia an exhaustion of the neuron, the effect of defective metabolism," is perhaps as good a brief definition as can be made, still it does not provide for the getting hold of the mentality of the patient, and without such control medicine in neurasthenia has only partial effect.

B. The point is made that each neurasthenia patient has a "chief obsession," and that once this is overcome, all minor symptoms are abated.

C. A number of cases are given, showing the chief obsession in each, and the means used to remove it.

D. The doubtful benefit of strychnine in neurasthenia.

SOME EYE PROBLEMS THE GENERAL PRACTITIONERS IS CALLED UPON TO SOLVE—Abstract.

Richard J. Tivnen, Chicago.

1. Importance of eye findings as an aid to diagnosis and prognosis of general disease. Nephritis, diabetes, locomotor Ataxia, rheumatism, syphilis.
2. Possible sources of error in the diagnosis and management of; (a) Foreign Bodies; (b) Iritis, Conjunctivitis, Scleritis, Glaucoma.
3. Use and mis-use of cocaine and atrophine.
4. Treatment of cross-eyed children.

SYPHILITIC MENINGITIS IN CHILDREN.

Wm. J. Butler, Chicago.

Report of case with sudden onset; chill, high temperature, semi-comatose, diffuse maculopapular eruption. Result of spinal puncture. Blood examination. Exchanges. Localized paralysis. Treatment. Result. Present status.

PELVIC INFECTIONS.

Abstract of Paper of Dr. T. J. Watkins.

Pelvic infections is preferable to pelvic inflammation as a name to designate the disease, as infection injure and destroy tissues, whereas inflammation tends to conserve tissue.

An attempt will be made to limit the paper to a discussion of some of the practical points of pelvic infections:

Importance of the disease.

Same principles are involved in pelvic infections as in infections in other parts of the body.

General consideration of the etiology, pathology, symptomatology, diagnosis, prognosis and treatment.

Importance of Prophylaxis.

Topical applications are often of little or no value.

Conservatism during the acute stage is of great importance.

Spontaneous and complete recoveries sometimes result.

Hereditary Syphilis.

R. R. Campbell, Chicago.

Our means of diagnosis. Importance of Hutchinson's symptoms. The skin manifestations. Findings in the fundus of the eye, etc.

Mortality from pulmonary tuberculosis at various periods of lofe from statistics compiled during the last census year.

The enactment and enforcement of laws relating to hygienic and sanitary measures, the construction of State sanatoria for the care of the afflicted element among the poor.

The climatic treatment of tuberculosis, differences of opinon relative to the value of the arid regions as compared to the home climate in the arrest of the disease.

The success of the Ottawa Tent Colony.

The tuberculosis problem to be solved at home. Conculsions based upon long residence in Colorado and observations made in New Mexico and Arizona. Care to be exercised in prescribing climate. The climate of Colorado. Atmospheric conditions; Denison's observations of 1876. The city of Denver, its hospitals and facilities for caring for the sick. Effects of altitude on pulse and respiration at an elevation of ten thousand feet. The class of cases to be sent to Colorado; the effect of an altitude of 5000 feet on the pulmonary invalid. Importance of early recognition of the disease as advocated in New York Medical Journal, Aug. 27, 1904. Conclusions relative to climatic treatment of tuberculosis in properly selected cases.

Abstract.

Report of a case of labor in a woman with a double dislocation of the hips. Death of the fetus followed by craniotomy; pregnancy in the same case later followed by Caesarian Section. Some suggestions regarding operation in cases of contracted pelvis.

THE PRESENT STATUS OF SERUM THERAPY.—Abstract.

By E. R. Larned, M. D.

1. What is meant by Serum Therapy.
2. Classification of Sera as used in Medicine.
   a. Curative Sera.
   b. Diagnostic Sera.
3. Classification of Sera as to efficacy.
   a. Those of demonstrated efficacy.
   b. Those whose value appears probable but remains to be proved.
4. Methods used in elaboration of Sera.
5. Classification of Scientific Workers in Sera.
6. Brief outline of the present status of the following Sera.
   A. Those of demonstrated efficacy.
      1. Antidiphtheritic.
      2. Antitetanic.
      3. Antiplague.
      4. Antistreptococcic.
      5. Sera for Exophthalmic Goitre.
   B. Those whose value appears probable but remains to be proved.
      1. Serum for Hay Fever.
      2. Tuberculin.
      3. Antityphoid.
      4. Antirabic.
      5. Antitubercle.
      6. Antivenine.
   C. Those whose efficacy is nil.
      1. Antipneumococcic. Sera.
      2. Antiscarlatinal. Sera.
      3. Antidysenteric. Sera.
      4. Antivarioloid. Sera.
      5. Antitoxin for Cerebro-Spinal Meningitis.
      6. Serum for Rheumatism.
      7. Serum for Syphilis.
      8. Serum for Anthrax.
      9. Cancer Serum.
      10. Leprolin.

Variola.

This malady will be treated under its usual classifications. Some kodak pictures will be exhibited and experience given.

News Items.

Dr. M. D. Foster is mayor of Olney.

Dr. T. C. McCord has been elected Mayor of Paris.

Dr. J. L. Kerrell, of Medora, has located at Thebes.

Dr. J. M. Duncan has been elected Mayor of Pawnee.

Dr. G. W. Ross has been elected Mayor of Carrollton.

Dr. Jesse McDavid, of Litchfield, has located in Decatur.

Dr. Walter H. Allyn has been elected Mayor of Waverly.

Dr. Priest has moved from Buffalo Hart to Williamsville.

Dr. Wm. Englebach, of Arenzville, has located in Omaha, Neb.

Dr. J. T. Williams, of Nebo, has written a poem entitled "Illinois."

Dr. Rudolph W. Holmes has removed to 412 North State St., Chicago.

Dr. W. A. Mudd, of Athens, was elected mayor at the last election.

Hudson James, M. D., of McLean County, died March 27; aged 61 years.

Dr. T. F. Hill of Athens, has been elected president of the school board.

Dr. Elizabeth Matthews, of Springfield, has gone to Europe on a vacation.

Dr. E. R. Motley, of Virden, has been elected a member of the school board.

Dr. Roy F. Rogers, of Shelbyville, has gone to Europe for post graduate study.

Dr. C. M. Bowcock, of Springfield, is convalescent after an operation for gall stones.

Dr. S. R. Hopkins, of Springfield, expects to go to Europe in June for a year's post graduate study.

Dr. F. C. Harnish has removed his office to suite 1122 Republic Bldg., State and Adams Sts., Chicago.

A chicken brooder is taking the place of an expensive incubator at Tallula. Twins are thriving in it.

Dr. D. N. Eisendrath has removed his residence to 4840 Woodlawn avenue, Chicago. Telephone 717 Oakland.

Dr. L. H. Abele has removed his office to the Republic Bldg., Chicago. His practice is limited to diseases of the eye.

Dr. McClelland, of Williamsville, will remove to Springfield, where he will erect a handsome residence and retire from practice.

Dr. Norman Kerr, of Chicago, has removed his residence to 275 LaSalle ave., where his office hours are from 6:00 to 7:30 p. m.

Dr. Anna B. Schultz of South State St., Chicago, recently testified that she had given gifts to policemen who had turned business her way.

A young physician, unmarried, wishes to connect himself as an assistant to a well known physician or surgeon. Those wishing a conscientious man and hard worker, address mail to Dr. D. Ricardo, 4419 Indiana Ave.

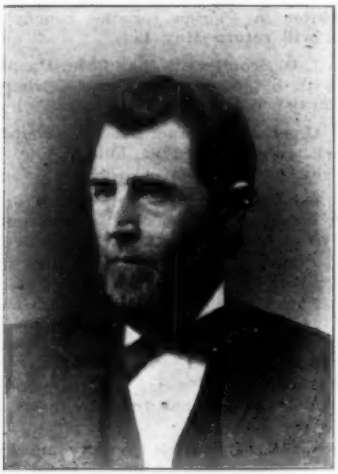
A doctor named Barker succeeds Osler at Johns Hopkins. This seems an especially appropriate selection—considering what a howl went up when Osler left.—Springfield State Journal.

Dr. W. L. Rukenbrod, of Decatur, on March 31, was the target for pistol practice by a Mrs. Thos. D. Loomis. The cause is said to have been remarks made by the physician about the character of his assailant.

The Christian County Medical Society met at Taylorville April 20th and elected officers for the ensuing year as follows: President, C. L

Carroll, of Taylorville; first vice president, C. W. Coe, of Stonington; second vice president, R. W. Reasoner, of Morrisonville; secretary-treasurer, D. F. Morton, of Taylorville.

Dr. Warner is the father of Col. V. Warner, present Commissioner of Pensions, and father-



Dr. John Warner.

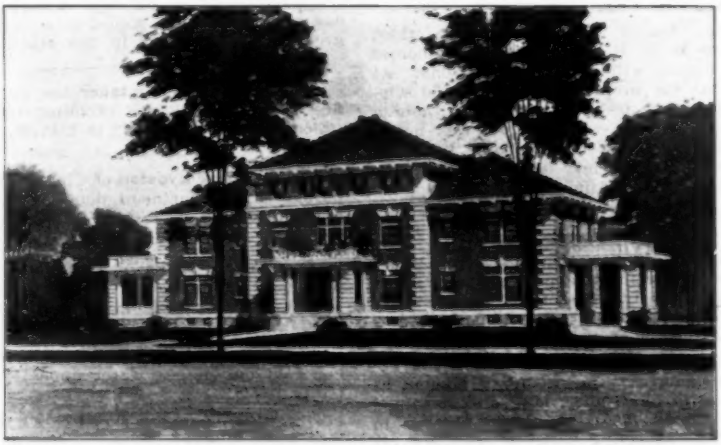
in-law of Dr. Harrison Mettler, of Chicago. He began practicing medicine in DeWitt County in 1841 and rode on horseback often 50 or 60 miles to see a patient. Before the Civil War the doctor retired from practice and went into the banking business and accumulated a great fortune, being considered one of the wealthiest men in the State. He is still in good health and attends to a part of his large business.

Frederick Leo Orsinger of LaSalle, Ill., has begun suit for mandamus to compel the state board of health to issue to him a certificate permitting him to practice medicine in Illinois The suit comes after the doctor has practiced for more than thirty years in this country after graduating, he says, from a school of medicine in Zurich, Switzerland.

Dr. Edward J. Barcal of Chicago, has been sued for divorce by his wife, who alleges that he fractured her rib by a blow when asked for money to buy food. She also asserts that her husband abandoned the practice of medicine to become a private detective and that recently he was fined and sent to the bridewell for beating her. She was given an inpunction forbidding Barcal to molest her at 227 Sangamon St.

Ground was broken recently for the new Michael Reese hospital to be erected on the old site at Twenty-ninth street and Groveland Park avenue. President H. F. Hahn of the United Hebrew Charities spoke, and the first spadeful of earth was turned by Isaac Greensfelder, who performed the similar duty twenty-five years ago at the beginning of the old building. The new structure will cost around $500,000.

Dillman, F. S., M. D., of Ingraham, was fatally injured April 2 in a runaway and died Tuesday, April 4th. He was returning from a professional visit at midnight when the accident occurred He was found unconscious and taken to hi home where efforts were made to prolong his life by his relative, Dr J. V. Dillman, of Bible Grove, and Dr. Geo. T. Weber of Olney. He was 35 years old and graduated at the Missouri Medical college in 1898.



Warner Hospital, Clinton, Illinois.

How They "Keep up a Front."

Dr. Alfred J. Burdick, of Ravenswood, is conducting a popular sprightly journal entitled, "The Way to Win." He contributed to the April issue a five page article on "Where Shall

the Young Doctor Locate." From this we extract the following of interest concerning professional life in Chicago:

Not long ago a very distinguished physician died in Chicago. He stood veritably at the head of his specialty and attended the very best families. His practice was enormous and his fees princely; but he worked like a stevedore—so hard in fact that his health was ruined, and that brought about the end of it all, for he killed himself by overwork. Such a successful man surely had accumulated enough to make his family comfortable? The last six months of his life he was an invalid, and during this time he lived upon a $10,000 fee that he received for his last case. Nothing was left.

I was talking some time ago with a friend of mine, a physician, concerning the doctors on his street, six or eight of them. He went over the list:

"Dr. B.," said he, "has a job at the city hall which takes part of his time. A ekes out a living with life insurance work; C does hack work for the medical papers; D teaches at a medical school to help out expenses; E does detail work for a drug firm"—and so he went through the list. Only one of these doctors, all of whom were successful and prosperous, so far as the outsider could judge, was making a living entirely from the practice of medicine. This is the history of thousands of physicians in Chicago and other large cities. They are veritably "hanging on by their eyebrows" waiting for the opportunity to come along which shall bring them success and meanwhile many of them are living by makeshifts.

Medicine Peddler in Trouble.

Rushville, March 27.—Special.—The third trial against M. L. Ryan for selling medicines without a license will be called Thursday. At the last trial the prosecution put on 250 witnesses to prove he peddled medicine without a license. The defense was that he was not a peddler, but the agent of a reliable house at Winona, Minn. The jury deadlocked in the second trial as they did in the first.

Jungles Jugulated.

Charging unfair treatment, William Witry Jungles began mandamus proceedings yesterday to compel the trustees of the University of Chicago and of Rush college to issue to him a certificate as doctor of medicine.

Jungles, who formerly attended the University of Michigan, says he became a student at Rush college in September, 1897, and remained there until June, 1900. He again entered in October, 1903, expecting soon to complete his work, but he was not graduated.

The plaintiff declares he has passed all his examination and has acquired sufficient knowledge of the practice of medicine and surgery.

LIVINGSTON COUNTY NEWS NOTES.

Dr. Henline has located at Graymont.

Dr. H. H. Dally, of Blackstone, has gone to Mexico where he expects to regain his health.

The semi-annual meeting of the Livingston County Medical Society will be held in Pontiac May 4th.

Dr. A. B. Midleton, who has ben spending the winter in Florida for the benefit of his health, will return May 1.

Dr. J. D. Scouller, Jr., has formed a partnership with his fateher at Pontiac, where they have furnished a new suit of offices.

Dr. Breeze, who practiced for several years in Odell, recently died at Joliet. The funeral was held from his home in Odell.

Dr Asa Cooms, of Suggert, who is druggist, grocer, doctor and postmaster, was recently defeated in a race for justice of the peace.

The "Can't Work a Pull" club was recently organized in Pontiac by two physicians, but at the first meeting there was not enough members to fill the three offices, and it was concluded to disband because no other qualified members could be found.

Six months ago Pontiac did not have a hospital, but today she has three in the course of construction.

Dr. E. H. Fitzpatrick recently purchased a warehouse and is reconstructing it for the purpose of a hospital.

The St. Francis sisters have purchased a residence and will soon open it as a hospital.

Dr. J. A. Claybourne has begun the erection of a new hospital building.

The people of this city have been agitating the advisability of building a hospital, but no one expected that it would so soon become the greatest hospital city in the state.

Dr. William B. Whitaker has opened an office, suite 400 Reliance Building, 100 State St., Chicago. Office hours 12 to 2 P. M.

Dr. G. Frank Lydston of Chicago has recently purchased an apartment house on Lake avenue for $35,000.

Dr. Edward Duke of Danville, has recently purchased a practice at Coin, Iowa.

Surer Thing.

The Doctor—"Doesn't this scheme for making gold out of sea water appeal to your cupidity?"

The Druggist—"Not a bit. I'm doing fairly well with mineral water."

Profits by the Doctor.

Robinson—"It seems as though women had a mania for spending money."

Rawlins—"I know it. Why, whenever my wife is too sick to go down town shopping she sends for the doctor."—Judge.

HOW TO LIVE.

One of the difficulties which beset the doctor on every side is that he is subject to constant misrepresentation, vilification and abuse, even from those who ought to be his heartiest defenders. Every now school, cult, or religion; every alleged "reform," social or economic; every new stripe of quackery (and their name is legion) commences its propaganda with an attack upon the medical profession. Even the unthinking clergy, who benefit more from the charity of the profession that any other class, and who should be as deeply interested in the physical as in the spiritual welfare of their people (mens sana in sano corpore) all too often lend their influence to our undoing, through their free-will offerings of testimonials to the patent-medicine fakirs and nostrum-venders who, under the guise of curers of the sick, are preying like vampires upon the public, fairly forcing their rum-remedies down the throats of the all-too-gullible public by means of their lying advertisements, supported by "testimony," bought, garbled or stolen, and made to fit their nefarious scheme of destruction—not infrequently using as their strongest argument "recommended by the medical profession."

To a certain extent medical men (you, doctor) are themselves responsible for this condition of things, because they have so hedged themselves about with the ill-advised reticence which they honestly, though erroneously, believe is enjoined by the "code," that they will not rise in their own defense; and the public press, which fattens upon the advertising of these frauds, loses no opportunity to furnish any misinformation which tends to weaken the faith of the public in the doctor.

It has become a problem, how we are to put ourselves right with the people; how we are to let them understand something of the marvelous work our scientists are doing; how disease is being blotted out by the ablest and most disinterested work for humanity that any class of men ever attempted; how medicine may and does relieve and cure and, not less important, how they, the people, are being victimized by a veritable "trust" of these soulless money-sucking vampires who not only fatten on their real misfortunes but the more so upon those most exacting imaginary ones for the creation of which they themselves are responsible.

There are a number of socalled popular medical journals. Some (a very few, of these are excellent; more are questionably tolerable, most are abominable. Even those of the better sort are, to a considerable degree, the organs of individuals or corporations with private interests or peculiar ideas to conserve or promote; few, very few, (we cannot think now of one) have in any sense at heart the interest of the doctor and the preservation of his influence in the community for the good and welfare thereof. Many (even most) of these journals are openly antagonistic to the doctor; are doing everything in their power to destroy his hold upon the people, and to paint him as a creature to be distrusted and feared, as a man actuated by the grossest self-interest—a something to be shattered in favor of the special fad or fake which they promote.

Posing as advocates of physical culture, food fads and other foolishness, magnifying the possibility of the socalled "natural methods of cure"—mind cure, suggestion and the like (and always against the doctor), these sheets are exerting a tremendous influence upon the country, and a most dangerous once. All or nearly all of them are fighting vaccination, serum therapy (antitoxin, etc.) and directly or indirectly all methods of medicinal therapeutics. But run through their advertising pages and you will find represented the most vicious and "suggestive" things that can (but should not) escape the toils of a post-office fraud-order. We know that behind at least one of these magazines, one claiming a circulation of over 100,000, stands one of the most-widely advertised and most dangerous rum-remedy institutions, whose alleged cure-all, stronger in alcohol than whisky, and many timse stronger than beet, against which so much is and may well be said, is engrafting more evil on humanity in general than a thousand open saloons, and accursed as they are, is more to be dreaded for its insidious influence than is almost any other evil within our ken. And this is the kind of "medical literature" that is moulding the minds of the people! This is what is taking from the doctor the very bread of his moutn and using it to kill the soul and body of his neighbors and his friends.

There should be a popular journal behind which the doctor can stand. There is one! In **How To Live,** of which Dr. George F. Butler is editor-in-chief, we have a journal published by doctors, intended to "hold up the hands" of the medical profession in its struggle to better the condition of men and women; and to this journal we give our unqualified endorsement and support, urging you, brother, to receive it with open arms and to secure its widest possible introduction in your community, that the truth may be known, and knowing it that your people may be able to oppose the wiles of the devil and be led to come to you in their time of need for that help and advice which, in its very fullness, you are so well able to give.

There are certainly few if any men better fitted than Dr. Butler to assume the leadership in this great work. He is a general practician of wide experience; as superintendent of the Alma Sanitarium for years, he has come into intimate touch with the most modern methods of treating disease, both with and without drugs; he is a teacher of therapeutics and practice in the Medical Department of the University of Illinois, and the Dearborn Medical College, both of Chicago, and is a well-known and polished writer of medical books and of general literature as well.

How To Live and its editor have taken common cause with ourselves; they are now part of us; we have entered heart and soul into this work. The magazine, removed from Alma, Mich., will hereafter be issued from the Clinic office, and we propose to use our utmost efforts to make it such a journal that every doctor will

see and feel in it an ally in which he can confide and will not rest until he has introduced it into the homes of his clientele. It will be clean from beginning to end. There will be no medical advertising of any sort admitted—nothing, if we know it, the spread of the knowledge of which directly or indirectly, will take one dollar from the doctor. Through **How To Live** we propose to instill into the minds of its readers that it is their duty to guard against these fakes and shams, and to go to the doctor when they are sick—that self-medication is always dangerous, usually disastrous and often deadly.

How To Live will be a family magazine, with departments for father, mother and the children—stories, poetry and the best of good advice on everything that interests and concerns the home. It is not to be a "health journal," but a help to right living—a help to every one who really wants to know "how to live." In other words, we propose to make it such a journal that you simply must have it on your home-table as well as in your waiting-room; so good and helpful that you will feel impelled to say to your patrons: "John, Mary, here is something you ought to have in your family; it's just the thing for yourself and the children; it will help you to live right."

How To Live is devoted to the health, happiness and betterment of the people. Through it we are going to fight the fight of the doctor among the people, and he will and must help us. As doctors we are going to "nail" the lies that are being told about us; we are going to stand up for truth and right; we are going to let in light on quackery and its methods; we are going to strike "with might and main" the alcoholic nostrums and habit-forming drug dopes and show their dangers; we are going to do our part to maintain the sanctity of the home, to carry a message of real genuine love and helpfulness; one that shall encourage and inspire all who read our pages. In **How To Live** we shall point the error as we see it and strive to show "the better way" of heart, of body and of mind, in home and in society; the true sociology of right living.

There will be nothing "namby-pamby" about **How To Live,** on the contrary it will be "very much alive;" and we ask you to stand behind the movement. Will you do it? Hundreds of the Clinic family, to whom the idea has already been presented, have answered "yes" with the subscriptions. Won't you? (See ad page 78 for business announcement and subscription form.)

Brother, it is worth your while! You owe it to yourself to support this work—to help us to help you—and we want you to do it! We are in it, heart and hand, for real, genuine, helpful betterment. If you are with us, say "yes" with your subscription and bring your friends with you.

Dr. Frank P. Norbury, after a protracted period of illness, has resumed his consultation practice.

Dr. W. T. Eddy, of Shelbyville, was elected mayor at the last city election.

Marriages and Deaths.

Marriages.

L. G. Allen, M. D., and Miss Effie Felts, both of Litchfield, April 26.

Albert F. Henning, M. D., Chicago, and Miss Mary B. Meager of St. Paul, at St. Paul, Minn., April 26. About a year ago Miss Meager fell seriously ill while visiting in Chicago. She was placed in a private ward in a Chicago hospital, where she first met Dr. Henning, who as an interne attended her. It was a case of love at first sight and before the girl had left the hospital her hand was pledged to Dr. Henning. They were married at St. Mary's church and left for Germany, where Dr. Henning will continue his studies in medicine.

Lawrence P. Crawford, M. D., Earlville, Ill., to Miss Ruth Dixon of Fairview, Ill., March 22.

Wiliam Englebach, M. D., Arenzville, Ill., to Miss Fama L. Reynolds of Barry, Ill, at Quincy, Ill., March 27.

Mayfield-Richardson.

Jacksonville, April, 14.—Dr. Brock Mayfield and Mrs. Mary Richardson were married at the home of the bride near Lynville Thursday. The bride is the widow of the late Vincent Richardson, who was regarded as one of the wealthiest men in the county. She is 75 years of age while Doctor Mayfield is 51 years.

Doctor Mayfield is one of the most prominent physicians in the city. The couple were reported to have been married in Missouri about two years ago but no certification of the report could ever be made.

Deaths.

Fletcher S. Dillman, M. D., Missouri Medical College, St. Louis, 1898, who was thrown from a buggy March 26, died at his home in Ingraham, Ill., April 4. He did not regain consciousness after the injury.

Presley A. Rosenberger, M. D., St. Louis Medical College, 1859, of Petersburg, Ill., died at the home of his son in El Reno, Okla., from heart disease, April 8, aged 80.

Abner Crane Williamson, M. D., Ohio, 1879, died suddenly at his office in Champaign, Ill., from cerebral hemorrhage, April 8, aged 65.

William H. Hoskinson, M. D., Miami Medical College, Cincinnatti, 1882, died at his home in Trimble, Ill., February 20, aged 50.

Frank S. Filkins, M. D., years of practice Illinois, formerly of Barrington, died at Arlington Heights, Ill., Feb. 20, aged 65.

Cystogen Aperient

GRANULAR EFFERVESCENT SALT OF CYSTOGEN

INDICATED WHEREVER ELIMINATION IS BELOW PAR

Prophylactic and resolvent in uric acid conditions. Cystogen Aperient dissolves uric acid and phosphatic sediments, and exercises a beneficial eliminative effect on the whole organism—tones the stomach and bowels and flushes the urinary tract with a dilute solution of Formaldehyde. Of special value in Rheumatism, Gout, Urinary Deposits, Calculus, Cystitis and Gonorrhoea.

AN ANTI-URIC ACID APERIENT and URINARY ANTISEPTIC, ELIMINATIVE and PROPHYLACTIC

DOSE—A heaping teaspoonful three or four times daily. Samples and literature will be furnished on request of physicians.

URIC-ACID SOLVENT

CYSTOGEN CHEMICAL CO.
ST. LOUIS, U.S.A.

URINARY ANTISEPTIC

UNSWEETENED
Highland Brand
TRADE MARK
Evaporated Cream
HELVETIA MILK CONDENSING CO.
FOOD FOR INFANTS
Simplest, most complete and acceptable Substitute for mother's milk. Always ready-dilute with water q.s. and give to BABY. HELVETIA MILK CONDENSING CO.
Trial Quantity Free to Physicians
HIGHLAND ILL.

The Illinois Medical Journal.

EDITORIAL OFFICE, 522 CAPITOL AVENUE, SPRINGFIELD.

Copy for advertisements must reach the editor's office by the 20th of the month in order to secure insertion.

PUBLISHER'S NOTES.

The Journal is not responsible for any medical or therapeutical views expressed in this department.

GYNECOLOGY.

By Henry J. Garrigues, A.M., M.D.

Gynecologist to the St. Mark's Hospital, New York City. Consulting Obstretric Surgeon to the New York Maternity Hospital. Professor of Obstetrics in the New York Post-Graduate Schol and Hospital.

Octavo. 462 Pages; 328 Illustrations. Cloth $3.00.

J. B. LIPPINCOTT CO. Philadelphia.

Dr. Garrigues' ability as a gynecologist and writer is well known, and in this entirely new work he has devoted the largest share of his attention to Medical Gynecology.

To the practitioner desiring to acquaint himself with the present status of modern gynecology, and the physician willing to refresh his memory or learn the latest details in treatment for a particular case in hand, the book will appeal with peculiar force.

Dr. Garrigues' exceptional facility for imparting knowledge and writing concisely is best exemplified in this his latest work. No space has been given to the history and progress of the science and practice of gynecology, no case histories nor bibliographies have been introduced as padding, but the space so saved has been devoted to differential diagnosis and treatment.

The author teaches how to recognize the nature of the disease or condition, and how to attack it with medical, electrical or surgical remedies. Minor operations which the general practitioner is likely to undertake are described with minute detail. In regard to the others, the chief features are indicated.

The work embraces the abnormalities of all the organs in the female pelvis, incusive of the urinary organs and the rectum, excepting those conditions which are connected with pregnancy and childbirth, described in the author's work on obstetrics.

The plan is laid in such a way that the reader is gradually led from the simple and easy to the complicated and difficult. For this purpose the book is divided into a general and special division. In the latter the anatomical order is followed, beginning from the outside. For practical purposes, special chapters on hemorrhage, leucorrhea, and sterility are added.

The text is elucidated by a large number of illustrations, many of which are original and based upon the author's own researches, dissections and operations.

Special Trains for the Physicians Enroute to Portland, Oregon.

Arrangements have been completed under which the Northern Pacific railway will run three solid special trains through to the Pacific coast for physicians who will go west early in July to attend the coming sessions of the American Medical Association, the national organization of doctors. The first special will run through from Chicago, leaving June 30 and reaching St. Paul July 1, proceeding west and stopping at Gardiner, Mont., for a 5½ day tour of the Yellowstone National Park. A second solid special train will leave Chicago July 1, reaching St. Paul July 2, and proceeding west to Gardiner for a similar tour of the Yellowstone. A third special train will leave Chicago July 6, running through to Portland with stops at several important points.

The Northern Pacific has been designated the official route for the handling of the physicians and the national officers will go west on one of the first two specials, in both of which accommodations are very nearly exhausted. Arrangements are now being made for numerous small parties for space in the third special and it is possible that additional trains will be arranged for, if the demand for reservations continues heavy. Each special will be made up of standard Pullman equipment, with through dining cars and ample baggage accommodations. Every facility which adds to luxurious comfort enroute is being arranged for and the train schedules have been worked out with especial reference to the convenience of the doctors. The third special will arrive in Portland the morning before the convention opens.

Editors Medical Publications—Especial attention is called to the fact that berth reservations should be made immediately through C. A. Matthews, General Agent Passenger Department, N. P. R., Chicago. The best service can be afforded if the physicians will co-operate in this matter, arranging their plans accordingly. Your assistance in making these facts known will be greatly appreciated.